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GLOBAL DATA MONITORING REPORT

August, 1996

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1. Introduction

As the WMO-appointed lead centre for monitoring surface marine data, the U.K. Meteorological Office produces monthly statistics on the quality of these observations received at RSMC Bracknell. This report includes this information along with statistics for most other types of data. The figures and tables contained herein are presented according to the agreed standards for the exchange of monitoring results.

The report is based on data received at the UK Meteorological Office Headquarters, Bracknell in time for inclusion into the appropriate analysis. The evaluation of data quality is based on comparison with the appropriate 6-hour global model forecast (background field). Generally, the background field is of high quality except in data sparse areas, tropical regions and areas close to steep orography where care should be taken in interpreting the statistics shown.

Comments or queries on the report are welcome and should be addressed to:-

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2 Global Data Monitoring Statistics

Ships, Fixed buoys, Platforms and Drifting buoys observations

TABLES 1-2 contain lists of the stations which are considered to have returned suspect observations of pressure, windspeed, wind direction or temperature, as appropriate, during the month. The criteria for quality control are given on the header page for each table.

Figures 1 and 2 show 10 degree lat/long box average numbers of SHIP/SYNOP and DRIFTER observations received per day throughout the month at Bracknell and assimilated into model runs. Only data from the main hours of 00 UTC, 06 UTC, 12UTC and 18 UTC are included. Box average values are plotted as the nearest whole number (values of x.5 are rounded up). Where the average is more than 999, then 999 is plotted. A box with no observations is blank. If the 24 hour average >0 but <0.5, then 0 is plotted.

Synop Observations

Table 3 contains a list of stations which are considered to have returned suspect observations of Pressure during the month. The criteria for quality control are given in the header page. The reporting practice of each station is included in the list of statistics.

At RSMC Bracknell, for synoptic stations at or below a height of 500 metres, reported mean sea-level pressure is used in the statistics. If this is unavailable the mean sea-level pressure is calculated from the reported station-level pressure and temperature.

For synoptic stations above 500 metres, the mean sea-level pressure is calculated from the reported station-level pressure and temperature, or, if these are not available the height of a standard pressure-level (e.g.: 850 hPa or 700 hPa). If neither of these are available, the reported mean sea-level pressure is used.

Some stations vary their reporting practice according to the observation hour (e.g.: some stations in the CIS report both mean sea-level and station-level pressure at 00 & 12 UTC, but only mean sea-level pressure at 06 & 18 UTC). For monitoring purposes, reported mean sea-level pressure is stored separately from that calculated from station-level pressure or height of a standard pressure-level. Only statistics for the preferred method (see above) are presented in this report, and so for certain high-level stations, such as those from the CIS, approximately half of the number of observations actually received will appear in the statistics.

Aircraft observations

TABLE 4 contains a list of statistics calculated from data received from all airline carriers.

Figure 3 shows 10 degree lat/long box average numbers of AIREP/ASDAR reports received per day throughout the month at Bracknell and assimilated into model runs in the layer 70-500 hPa. Observations with a vector wind difference (compared with the model background field) of >60 m s^{-1} have been excluded. Box average values are plotted as the nearest whole number (values of x.5 are rounded up). Where the average is more than 999, then 999 is plotted. A box with no observations is blank. If the 24 hour average >0 but <0.5, then 0 is plotted.

Figures 4-7 show wind statistics for AIREP/ASDAR in the layer 70-500 hPa. Observations with a vector wind difference > 60 m s^{-1} have been excluded. Statistics have not been calculated for 10 degree lat/long boxes containing <31 observations.

Figure	Parameter
4	Mean wind vectors
5	Mean observation - background wind vector
6	Mean observation-background speed (m s^{-1})
7	RMS observation-background vector (m s^{-1})

Radiosonde Observations

TABLES 5-7 contain lists of the stations which are considered to have returned suspect observations of geopotential height, vector wind or wind direction, as appropriate, during the month. The criteria for quality control are given on the header page for each table.

Figures 8 and 9 show 10 degree lat/long box average numbers of TEMP 500 hPa GEOPOTENTIAL HEIGHT and TEMP/PILOT 300 hPa WIND observations received per day throughout the month at Bracknell and assimilated into model runs. Data from all hours are included. Box average values are plotted as the nearest whole number (values of x.5 are rounded up). Where the average is more than 999, then 999 is plotted. A box with no observations is blank. If the 24 hour average >0 but <0.5, then 0 is plotted.

APPENDIX I shows details of the gross error limits used in TABLES 5 and 6 and the weights used in the RMS values in TABLE 5.

Satellite Observations

Figures 10-24 show satellite wind statistics for all geostationary satellites. All plots other than **AVAILABILITY** show average data where there are > 10 observations in a 10 degree lat/long box.

Figure	Parameter Plotted	Layer (hPa)
10	Availability/average daily number	701-1000
11	Vector mean wind (observed)	701-1000
12	Observation-background vector wind difference	701-1000
13	Mean observation-background speed differences	701-1000
14	RMS observation-background vector difference	701-1000
15	Availability/average daily number	401-700
16	Vector mean wind (observed)	401-700
17	Observation-background vector wind difference	401-700
18	Mean observation-background speed differences	401-700
19	RMS observation-background vector difference	401-700
20	Availability/average daily number	101-400
21	Vector mean wind (observed)	101-400
22	Observation-background vector wind difference	101-400
23	Mean observation-background speed differences	101-400
24	RMS observation-background vector difference	101-400

Figures 25-27 show satellite mean observation-background temperature differences for NOAA-12 soundings at 500 km resolution and figures 28-30 show the same statistics for NOAA-14. Data are plotted where there are > 30 observations in a 10 degree lat/long box.

N.B. 500 km SATEMs are no longer assimilated into the UKMO global Unified Model. Both 500 km and 120 km SATEMs were replaced on 16th April 1996 by 120 km resolution temperature profiles produced locally from the radiances disseminated by NESDIS (from NOAA-12 and NOAA-14).

Figure	Layer (hPa)
25/28	850-1000
26/29	100-300
27/30	30-50

3 Composite Observing Systems for the North Atlantic (COSNA)

This section shows statistics for upper air (radiosonde and aircraft) and surface (drifter) data for the North Atlantic area for data received at Bracknell during the month.

TABLE 8 shows quality statistics for **Mean Sea-level Pressure, Windspeed and Wind Direction** received at Bracknell in DRIFTER code during the month for the area
10°N - 80°N, 85°W - 0°W.

TABLE 9 shows quality statistics for **Temperature and Vector Wind** received at Bracknell from aircraft during the month for the area 40°N - 70°N, 60°W - 0°W.

Table 10 - 13 show quality statistics **(Geopotential Height and Windspeed at 100 and 500 hPa)** for all TEMPSHIPS in the area bounded by 0°N - 90°N, 100°W - 40°E and selected TEMP stations within the same area.

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Revisions

1. May 95 Monitoring statistics for NOAA-11 removed. Figures 25-27 now show data for NOAA-12
2. May 95 Notes giving details of observations included in wind direction statistics clarified and corrected.
3. August 95 Monitoring statistics for NOAA-14 added with figures 28-30.
4. February 96 Monitoring statistics for GOES-7 has been replaced by statistics for GOES-8 and GOES-9.

TABLE 1

MONITORING OF MARINE SURFACE OBSERVATIONS
MONTHLY SUSPECT LIST - SHIPS, FIXED BUOYS AND PLATFORMS
MONITORING CENTRE: BRACKNELL
MONTH: August, 1996

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from each unique identifier for ships, fixed buoys and platforms.

Standard of comparison :Background field from Bracknell global model.

Observation times :00, 06, 12, 18 UTC

Elements monitored :Mean sea level pressure (hPa).
:Wind speed (m s^{-1})
:Wind direction (Degrees).

Parameters monitored

:NOBS :Number of observations received excluding duplicates.

:NGE :Number of observations with gross errors.

:PGE :Percentage of observations with gross errors.

:SD :SD of difference of observations from background values excluding those with gross errors.

:BIAS :Mean difference of observations from background values excluding those with gross errors.
N.B. a positive bias indicates the observation is veered to the background.

:RMS :Root Mean Square difference of observations from background values excluding those with gross errors.

GROSS ERROR LIMIT :15 hPa (pressure)
:25 m s^{-1} (vector wind)

SELECTION CRITERIA :NOBS ≥ 20 , and one or more of the following:

1.|bias|	≥ 4 hPa	(pressure),
	≥ 5 m s^{-1}	(wind speed),
	≥ 30 degrees	(direction).
2.SD	≥ 6 hPa	(pressure),
	≥ 80 degrees	(direction).
3.PGE	≥ 25	

N.B. Observations of wind direction are only included in the wind direction statistics if the observed OR background wind speed > 5 m s^{-1}

IDENTIFIER	HOUR	ELEM	LEVEL	NOBS	NGE	PGE	SD	BIAS	RMS
MEAN SEA LEVEL PRESSURE									
CG2248	ALL	MSLP	SUR	73	73	100	0.0	0.0	0.0
C6FA6	ALL	MSLP	SUR	34	0	0	1.5	-6.4	6.6
C6JS	ALL	MSLP	SUR	28	0	0	1.7	4.8	5.1
C6LI6	ALL	MSLP	SUR	43	0	0	1.0	9.8	9.8
DDOJ	ALL	MSLP	SUR	21	2	10	5.5	-4.1	6.8
ELRE5	ALL	MSLP	SUR	68	0	0	0.9	6.2	6.3
EUJV	ALL	MSLP	SUR	64	2	3	3.1	10.4	10.9
LAWR2	ALL	MSLP	SUR	24	0	0	1.0	4.3	4.4
OZBL2	ALL	MSLP	SUR	21	0	0	3.9	5.1	6.4
PPXI	ALL	MSLP	SUR	27	0	0	1.1	4.0	4.2
P3XM4	ALL	MSLP	SUR	44	1	2	1.8	-5.8	6.1
SYMK	ALL	MSLP	SUR	42	1	2	1.2	5.4	5.5
S6CL	ALL	MSLP	SUR	23	0	0	0.9	5.9	5.9
UVJA	ALL	MSLP	SUR	25	3	12	4.0	-9.8	10.6
VCTV	ALL	MSLP	SUR	22	16	73	1.6	-9.8	9.9
VGNW	ALL	MSLP	SUR	21	6	29	1.3	-4.3	4.5
V2SA	ALL	MSLP	SUR	32	4	13	1.5	-11.6	11.7
3ESE9	ALL	MSLP	SUR	26	0	0	1.1	7.8	7.9
3FGQ3	ALL	MSLP	SUR	26	0	0	0.9	6.4	6.4
3FZW	ALL	MSLP	SUR	30	0	0	1.4	5.5	5.7
4XGT	ALL	MSLP	SUR	45	0	0	1.0	-4.1	4.2
48102	ALL	MSLP	SUR	162	36	22	7.8	-4.4	8.9
48111	ALL	MSLP	SUR	166	32	19	6.8	-1.5	7.0
9MCD	ALL	MSLP	SUR	75	0	0	1.9	5.3	5.7
9VIH	ALL	MSLP	SUR	54	0	0	1.5	-5.7	6.0
WIND SPEED									
ELJT7	ALL	SPEED	SUR	33	0	0	4.4	5.2	6.8
ELMF9	ALL	SPEED	SUR	45	0	0	2.3	5.2	5.7
ELNJ3	ALL	SPEED	SUR	29	2	7	3.3	5.2	6.1
GHMA	ALL	SPEED	SUR	37	0	0	2.2	-5.1	5.5
GQUK	ALL	SPEED	SUR	28	1	4	6.0	6.0	8.5
GQVJ	ALL	SPEED	SUR	28	1	4	8.1	5.6	9.8
HZXS	ALL	SPEED	SUR	27	1	4	5.5	7.1	9.0
JEKI	ALL	SPEED	SUR	20	0	0	6.6	5.1	8.3
KCBH	ALL	SPEED	SUR	37	0	0	2.4	5.7	6.2
PCSV	ALL	SPEED	SUR	31	0	0	6.2	7.1	9.4
PGDP	ALL	SPEED	SUR	45	0	0	5.2	5.4	7.5
PGND	ALL	SPEED	SUR	42	1	2	7.1	6.0	9.3
PJQI	ALL	SPEED	SUR	65	0	0	6.0	5.4	8.1
VRUR6	ALL	SPEED	SUR	36	0	0	5.4	5.2	7.5
ZCAK3	ALL	SPEED	SUR	53	3	6	5.3	12.0	13.1
3EUU6	ALL	SPEED	SUR	48	0	0	3.6	5.9	6.9
46054	ALL	SPEED	SUR	120	0	0	3.2	5.2	6.1
9MSM	ALL	SPEED	SUR	33	0	0	5.3	5.6	7.7
9MTZ	ALL	SPEED	SUR	30	0	0	3.9	7.6	8.6
WIND DIRECTION									
DUTA	ALL	DIRN.	SUR	39	0	0	31.0	-30.3	43.4
ELOU5	ALL	DIRN.	SUR	20	1	5	83.4	-8.6	83.9
JQCU	ALL	DIRN.	SUR	23	0	0	45.8	-30.6	55.1
P3TP6	ALL	DIRN.	SUR	41	0	0	42.7	31.2	52.8
S6BJ	ALL	DIRN.	SUR	28	0	0	18.8	32.6	37.6
XCTJ	ALL	DIRN.	SUR	27	0	0	42.4	-32.6	53.5
3FSH3	ALL	DIRN.	SUR	20	0	0	111.9	-34.4	117.1
44131	ALL	DIRN.	SUR	23	0	0	21.3	-30.2	37.0
46006	ALL	DIRN.	SUR	50	0	0	65.6	39.9	76.7
46030	ALL	DIRN.	SUR	94	0	0	27.5	32.5	42.6
46045	ALL	DIRN.	SUR	28	0	0	51.4	67.5	84.9
46053	ALL	DIRN.	SUR	64	0	0	42.0	-43.1	60.2

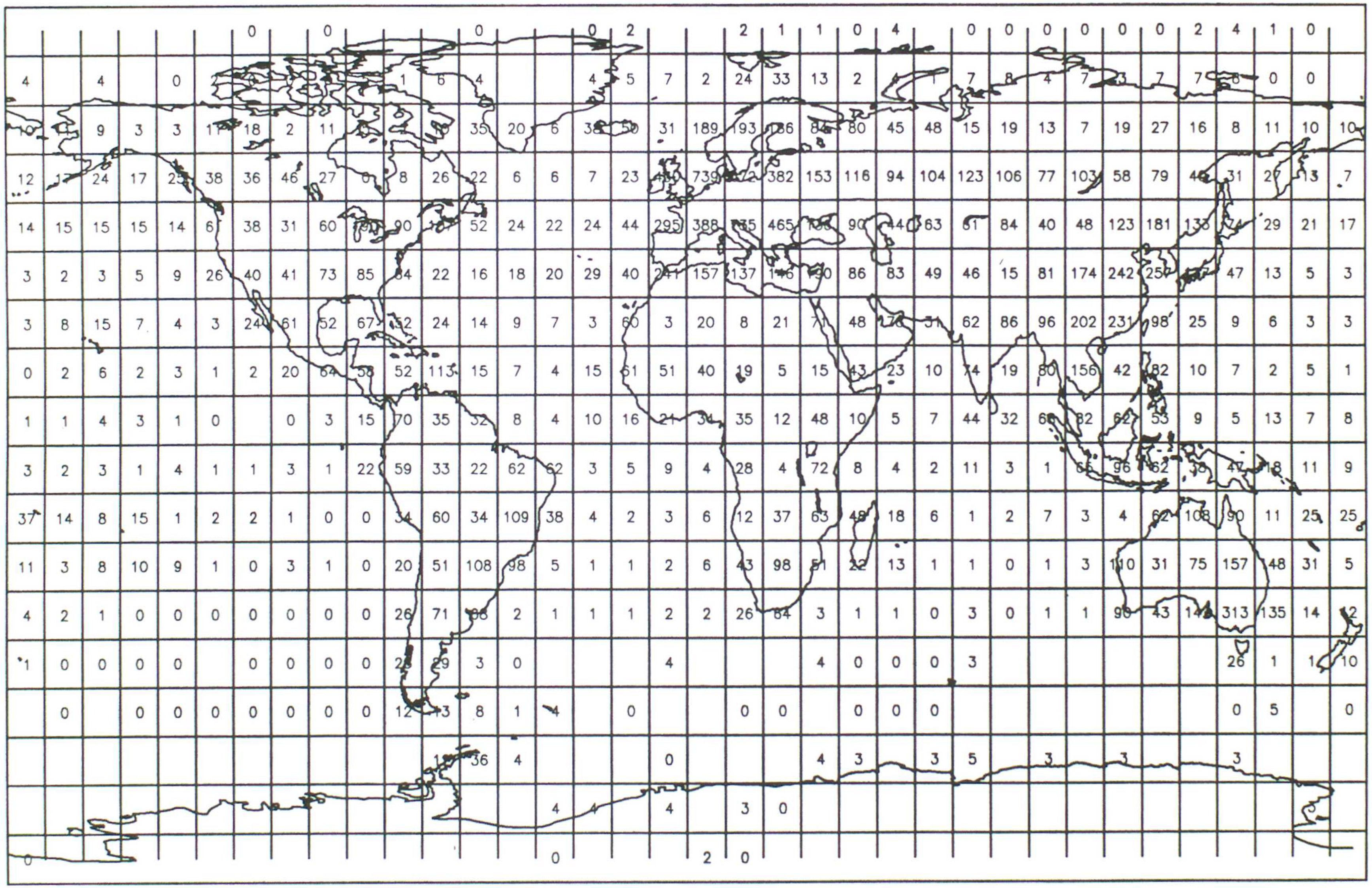
AVAILABILITY – SHIP/SYNOP – AUGUST 1996

MAIN HOURS ONLY

10 DEGREE BOX AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS

TOTAL AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS = 19046

FIGURE 1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12 17 24 17 25 38 36 46 27 8 26 22 6 6 7 23 739 382 153 116 94 104 123 106 77 103 58 79 46 31 27 13 7
14 15 15 15 14 6 38 31 60 90 52 24 22 24 44 295 388 465 90 63 61 84 40 48 123 181 133 29 21 17
3 2 3 5 9 26 40 41 73 85 84 22 16 18 20 29 40 241 157 137 146 190 86 83 49 46 15 81 174 242 257 47 13 5 3
3 8 15 7 4 3 24 61 52 67 52 24 14 9 7 3 60 3 20 8 21 71 48 176 31 62 86 96 202 231 98 25 9 6 3 3
0 2 6 2 3 1 2 20 64 58 52 113 15 7 4 15 61 51 40 19 5 15 43 23 10 74 19 80 156 42 82 10 7 2 5 1
1 1 4 3 1 0 0 3 15 70 35 32 8 4 10 16 21 34 35 12 48 10 5 7 44 32 68 82 62 53 9 5 13 7 8
3 2 3 1 4 1 1 3 1 22 59 33 22 62 62 3 5 9 4 28 4 72 8 4 2 11 3 1 65 96 62 38 47 18 11 9
37 14 8 15 1 2 2 1 0 0 34 60 34 109 38 4 2 3 6 12 37 63 48 18 6 1 2 7 3 4 62 108 90 11 25 25
11 3 8 10 9 1 0 3 1 0 20 51 108 98 5 1 1 2 6 43 98 51 22 13 1 1 0 1 3 110 31 75 157 148 31 5
4 2 1 0 0 0 0 0 0 0 26 71 88 2 1 1 1 2 2 26 64 3 1 1 0 3 0 1 1 90 43 148 313 135 14 12
1 0 0 0 0 0 0 0 0 28 29 3 0 4 4 0 0 0 3 26 1 1 10
0 0 0 0 0 0 0 0 12 13 8 1 4 0 0 0 0 0 0 0 5 0
13 36 4 0 4 3 3 5 3 3 3
4 4 4 3 0
0 0 2 0

TABLE 2

MONITORING OF MARINE SURFACE OBSERVATIONS
MONTHLY SUSPECT LIST - DRIFTING BUOYS
MONITORING CENTRE: BRACKNELL
MONTH: August, 1996

Monitoring procedures

Period		:One calendar month.	
Data monitored		:Reports from each unique identifier for drifting buoys.	
Standard of comparison		:Background field from Bracknell global model.	
Position		:Average latitude and longitude for period.	
Observation times		:00, 06, 12, 18 UTC	
Elements monitored		:Mean sea level pressure (hPa). :Wind speed (m s^{-1}). :Wind direction (degrees).	
Parameters monitored			
	:NOBS	:Number of observations received excluding duplicates.	
	:NGE	:Number of observations with gross errors.	
	:PGE	:Percentage of observations with gross errors.	
	:SD	:SD of difference of observations from background values excluding those with gross errors.	
	:BIAS	:Mean difference of observations from background values excluding those with gross errors. **N.B. a positive bias indicates the observation is veered to the background.**	
	:RMS	:Root Mean Square difference of observations from background values excluding those with gross errors.	
GROSS ERROR LIMIT	:15 hPa :25 m s^{-1}	(pressure) (vector wind)	
SELECTION CRITERIA :	NOBS	≥ 20 , and one or more of the following:	
	1.|bias|	≥ 4 hPa ≥ 5 m s^{-1} ≥ 30 degrees	(pressure), (wind speed), (direction).
	2.SD	≥ 6 hPa ≥ 80 degrees	(pressure), (direction).
	3.PGE	≥ 25.	

N.B. Observations of wind direction are only included in the wind direction statistics if the observed OR background wind speed > 5 m s^{-1}

IDENTIFIER	LAT.	LONG.	HOUR	ELEM	LEVEL	NOBS	NGE	PGE	SD	BIAS	RMS
MEAN SEA LEVEL PRESSURE											
25547	86.2	-5.6	ALL	MSLP	SUR	393	0	0	1.8	-4.3	4.6
33541	-50.2	22.3	ALL	MSLP	SUR	121	27	22	4.3	4.1	6.0
44613	39.1	-13.9	ALL	MSLP	SUR	257	123	48	0.6	0.5	0.8
54921	-36.0	-136.6	ALL	MSLP	SUR	154	22	14	8.4	-2.5	8.7
55908	-34.7	-175.6	ALL	MSLP	SUR	173	29	17	6.1	-1.6	6.3
61522	38.7	1.4	ALL	MSLP	SUR	41	0	0	1.2	-5.3	5.4
WIND SPEED											
46558	33.3	-134.2	ALL	SPEED	SUR	30	0	0	1.3	-5.6	5.7
65598	61.4	-33.1	ALL	SPEED	SUR	21	20	95	0.0	14.6	14.6
WIND DIRECTION											
44513	57.1	-54.4	ALL	DIRN.	SUR	123	0	0	28.8	36.4	46.4
46557	39.4	-142.0	ALL	DIRN.	SUR	78	0	0	39.8	-30.6	50.2
65598	61.4	-33.1	ALL	DIRN.	SUR	21	20	95	0.0	-32.1	32.1

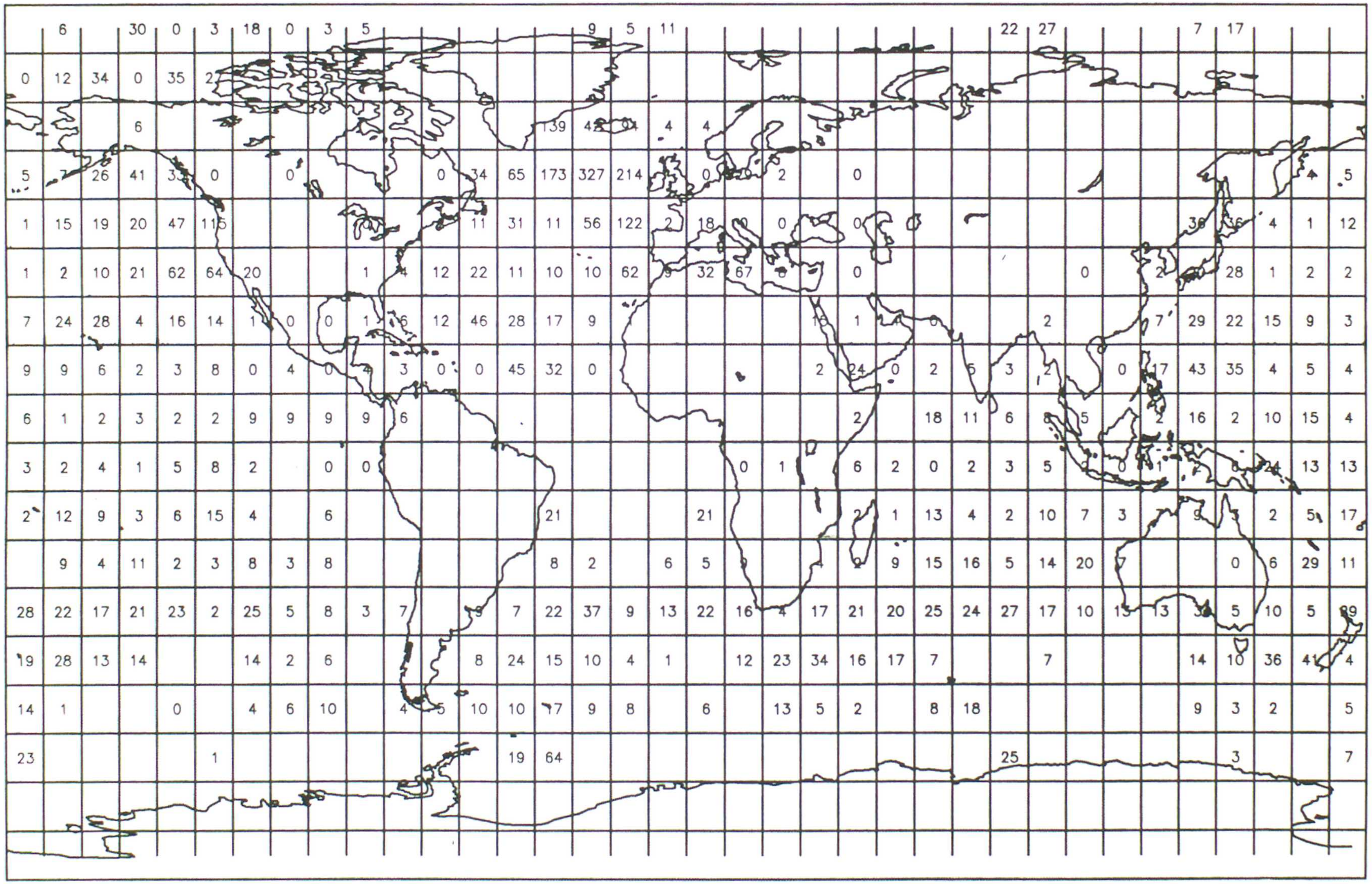
AVAILABILITY – DRIBU – AUGUST 1996

FIGURE 2

MAIN HOURS ONLY

10 DEGREE BOX AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS

TOTAL AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS = 5050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0 12 34 0 35 2
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1 2 10 21 62 64 20 1 4 12 22 11 10 10 62 9 32 67 8 0 0 2 20 28 1 2 2
7 24 28 4 16 14 1 0 0 1 6 12 46 28 17 9 1 16 1 4 0 2 7 29 22 15 9 3
9 9 6 2 3 8 0 4 0 4 3 0 0 45 32 0 2 24 0 2 5 3 2 0 17 43 35 4 5 4
6 1 2 3 2 2 9 9 9 9 6 2 18 11 6 8 5 2 16 2 10 15 4
3 2 4 1 5 8 2 0 0 0 1 6 2 0 2 3 5 2 0 1 2 6 24 13 13
2 12 9 3 6 15 4 6 21 21 2 1 13 4 2 10 7 3 7 9 3 2 5 17
9 4 11 2 3 8 3 8 8 2 6 5 9 4 2 9 15 16 5 14 20 7 0 6 29 11
28 22 17 21 23 2 25 5 8 3 7 9 7 22 37 9 13 22 16 4 17 21 20 25 24 27 17 10 13 13 38 5 10 5 39
19 28 13 14 14 2 6 8 24 15 10 4 1 12 23 34 16 17 7 7 14 10 36 41 4
14 1 0 4 6 10 4 5 10 10 17 9 8 6 13 5 2 8 18 9 3 2 5
23 1 19 64 25 3 7

TABLE 3

MONITORING OF LAND SURFACE OBSERVATIONS
MONTHLY SUSPECT LIST - SYNOPS & AUTOSYNOPS
MONITORING CENTRE: BRACKNELL
MONTH: August, 1996

Monitoring procedures

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for synops & autosynops.
Standard of comparison		:Background field from Bracknell global model.
Observation times		:00, 06, 12, 18 UTC
Elements monitored		:Mean sea level pressure (hPa).
Parameters monitored	:HT(m)	:Station height (in metres) as given in WMO No. 9 Vol A
	:RP	:Pressure reporting practice M=mean sea level pressure (hPa) reported. S=Station level pressure reported. 8=Geopotential height (m) of 850 hPa surface reported. 7=Geopotential height (m) of 700 hPa surface reported.
	:NOBS	:Number of observations received excluding duplicates.
	:NGE	:Number of observations with gross errors.
	:PGE	:Percentage of observations with gross errors.
	:%REJ	:Percentage of observations flagged.
	:SD	:SD of difference of observations from background values excluding those with gross errors.
	:BIAS	:Mean difference of observations from background values excluding those with gross errors.
	:RMS	:Root Mean Square difference of observations from background values excluding those with gross errors.

GROSS ERROR LIMIT	:15 hPa	(pressure)
SELECTION CRITERIA	:NOBS	≥ 20 ,and one or more of the following:
	1.|bias|	≥ 4 hPa
	2. SD	≥ 6 hPa
	3.PGE	≥ 25.

N.B. For stn ht ≥ 500m, mslp is that calculated from station level pressure where available.
For stn ht < 500m, mslp is that as reported by the station where available.

WMO REGION 1:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
60010	28.3N	16.5W	2368	S7	90	0	0	79	2.0	-5.6	5.9
60445	36.2N	5.4E	1081	S8	106	0	0	58	1.1	4.9	5.0
60468	35.6N	6.2E	1052	S8	103	103	100	0	0.0	0.0	0.0
60511	35.3N	1.4E	1127	S8	108	108	100	0	0.0	0.0	0.0
60535	34.7N	3.3E	1144	S8	82	2	2	90	1.0	-5.2	5.3
60571	31.6N	2.2W	773	S8	108	3	3	26	0.9	-4.3	4.4
60670	24.6N	9.5E	1054	S8	106	0	0	99	1.0	8.4	8.5
61233	15.2N	7.3W	265	M	41	0	0	5	2.2	-4.3	4.8
63330	13.5N	39.5E	2212	MS	52	1	2	27	1.7	-4.7	5.0
63333	11.1N	39.7E	1916	MS	76	0	0	95	1.1	7.2	7.3
63453	8.8N	39.8E	1062	S	52	10	19	37	1.6	11.9	12.0
63478	5.1N	44.6E	320	MS	53	0	0	0	1.2	6.2	6.3
68014	19.6S	18.1E	1411	S8	85	1	1	69	1.2	-5.8	5.9
68442	29.1S	26.3E	1354	S8	118	1	1	98	0.9	-5.9	6.0
68488	28.4S	31.1E	1279	S8	80	80	100	0	0.0	0.0	0.0
68752	32.8S	27.4E	524	S8	89	0	0	100	1.0	-8.3	8.4

WMO REGION 2:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
30554	54.5N	113.6E	995	MS	55	0	0	100	1.3	10.4	10.5
31915	44.4N	131.4E	211	MS	120	0	0	0	1.1	-5.2	5.3
35173	51.6N	69.8E	620	MS	58	58	100	0	0.0	0.0	0.0
40701	39.3N	44.4E	1470	MS	83	0	0	100	1.2	6.0	6.1
40743	36.2N	57.7E	941	MS	121	0	0	8	0.8	-4.7	4.8
40762	35.3N	59.2E	1333	MS	118	7	6	62	1.1	-13.2	13.2
40763	35.2N	58.5E	1060	MS	41	0	0	24	0.8	-5.5	5.6
40783	32.4N	49.7E	1972	MS	81	1	1	9	1.2	-4.2	4.4
40789	33.8N	55.1E	921	MS	71	1	1	100	0.8	8.9	8.9
40798	32.3N	50.9E	1991	MS	73	2	3	74	1.1	-6.5	6.6
40836	30.8N	51.7E	1880	MS	79	2	3	95	1.2	8.3	8.4
40859	29.0N	53.7E	1383	MS	74	3	4	99	1.2	9.2	9.3
41254	23.1N	57.7E	1755	S8	58	58	100	0	0.0	0.0	0.0
41396	16.0N	48.9E	700	M	26	0	0	58	2.2	6.2	6.6
41466	13.7N	44.1E	1385	8	28	0	0	75	1.2	-5.8	5.9
44298	46.4N	108.2E	1286	MS	50	0	0	8	1.6	4.7	5.0
44416	28.6N	81.6E	720	MS	75	0	0	17	2.4	4.9	5.5
44477	27.0N	87.4E	1445	S8	66	66	100	0	0.0	0.0	0.0
52602	38.8N	93.4E	2734	S	123	0	0	31	2.3	-6.0	6.4
56444	28.5N	98.9E	3488	S	120	120	100	0	0.0	0.0	0.0
56462	29.0N	101.5E	2994	S	120	1	1	99	1.9	7.5	7.7

WMO REGION 3:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
80099	7.1N	70.7W	128	M	45	0	0	4	1.5	-5.4	5.6
82704	7.6S	72.7W	170	MS	76	0	0	0	1.8	-4.6	4.9
83214	10.3S	54.9W	285	MS	40	0	0	0	1.4	-6.9	7.0
83235	12.4S	46.4W	660	MS	64	0	0	95	2.7	5.9	6.5
83295	13.4S	39.9W	755	MS	46	1	2	83	0.6	-4.0	4.0
83319	14.7S	52.4W	315	MS	36	0	0	0	1.3	-4.9	5.1
83332	14.1S	46.4W	950	MS	66	19	29	44	1.2	13.3	13.4
83376	15.9S	49.0W	730	MS	72	0	0	19	1.4	-4.1	4.3
83408	14.3S	43.8W	556	MS	66	0	0	100	1.6	10.6	10.7
83423	16.7S	49.3W	729	MS	72	0	0	68	1.6	-5.9	6.1
83488	17.8S	42.9W	1097	S	47	47	100	0	0.0	0.0	0.0
83512	18.5S	54.8W	286	MS	32	0	0	16	2.4	-5.3	5.8
83531	18.6S	46.5W	896	MS	47	0	0	49	1.4	-7.5	7.6
83577	19.8S	47.9W	743	MS	30	0	0	3	0.9	-4.3	4.4

WMO REGION 3:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
83586	19.5S	44.3W	732	MS	63	0	0	5	1.4	-4.2	4.4
83587	19.9S	43.9W	850	MS	78	0	0	88	2.9	-8.4	8.9
83689	21.3S	43.8W	1171	MS	59	1	2	61	1.4	4.0	4.2
83704	22.3S	53.9W	369	MS	54	5	9	7	2.7	-9.9	10.3
83773	23.1S	48.9W	793	MS	35	0	0	54	0.8	-5.9	6.0
83781	23.5S	46.6W	792	MS	85	0	0	88	1.7	4.4	4.7
83836	25.5S	50.6W	837	MS	76	0	0	37	1.2	-4.8	4.9
83916	28.2S	51.5W	806	MS	59	0	0	63	1.1	-5.1	5.2
84401	5.2S	80.6W	55	MS	124	0	0	10	1.6	5.4	5.6
84455	6.5S	76.4W	282	MS	117	0	0	1	2.4	8.7	9.0
84472	7.1S	78.5W	2622	S	51	0	0	92	1.7	-5.8	6.0
84501	8.1S	79.0W	30	MS	124	1	1	2	1.7	6.0	6.2
84542	9.4S	77.6W	2760	S	51	0	0	4	2.5	5.3	5.9
84686	13.6S	72.0W	3249	S	123	0	0	0	1.6	-5.5	5.7
84782	18.1S	70.3W	469	MS	123	0	0	4	1.8	9.4	9.6
85264	18.5S	64.1W	1998	S	48	48	100	0	0.0	0.0	0.0
85394	22.8S	64.3W	381	MS	36	0	0	8	3.1	4.0	5.1
85406	18.3S	70.3W	58	M	122	0	0	7	1.4	7.8	7.9
85418	20.5S	70.2W	48	M	124	0	0	1	1.3	4.9	5.1
85442	23.4S	70.4W	135	M	122	0	0	1	1.2	4.2	4.4

WMO REGION 4:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
76118	30.4N	109.7W	1040	MS	26	0	0	100	0.8	-9.6	9.6
76539	22.1N	101.0W	1870	MS	100	0	0	74	1.0	-4.2	4.3
76551	21.7N	106.5W	5	MS	21	0	0	90	2.5	-8.2	8.6
76632	20.1N	98.7W	2417	MS	63	0	0	92	0.9	-5.9	6.0
76634	20.1N	98.4W	2135	MS	93	1	1	80	1.1	-5.0	5.1
76658	19.2N	103.7W	494	MS	34	0	0	6	1.3	5.8	5.9
76762	17.5N	99.5W	1865	MS	102	102	100	0	0.0	0.0	0.0

WMO REGION 5:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
91339	5.5N	153.8E	3	MS	53	0	0	0	1.4	-5.0	5.2

WMO REGION 6:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
01245	62.6N	9.7E	630	MS	93	1	1	97	0.9	-5.7	5.8
02045	67.8N	20.4E	408	M	120	120	100	0	0.0	0.0	0.0
08221	40.5N	3.6W	633	MS	124	0	0	98	0.9	6.3	6.4
11024	48.4N	15.4E	860	S8	116	0	0	100	0.9	-12.9	12.9
11346	47.3N	12.8E	917	S8	89	0	0	20	1.2	-4.3	4.5
16020	46.5N	11.3E	1461	MS	92	92	100	0	0.0	0.0	0.0
16227	41.9N	13.6E	655	MS	123	123	100	0	0.0	0.0	0.0
16549	39.1N	8.3E	12	MS	122	0	0	0	0.9	-4.5	4.6
16614	40.4N	21.3E	604	MS	104	1	1	99	1.1	-7.3	7.4
40072	34.4N	40.9E	182	M	100	0	0	1	1.1	-5.7	5.8

ANTARCTIC:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
89108	89.0S	0.3W	2754	S	87	10	11	17	3.6	5.1	6.2
89208	90.0S	0.0W	2835	S	47	9	19	19	3.1	4.2	5.2
89512	70.8S	11.8E	-9999	M	103	1	1	4	3.3	-4.3	5.4
89577	75.9S	71.5E	2356	S	96	9	9	6	2.9	5.1	5.9

ANTARCTIC:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
89611	66.3S	110.5E	42	MS	120	7	6	17	4.4	-4.2	6.1
89744	74.0S	43.0E	3353	S	85	1	1	12	3.1	5.7	6.5
89774	73.4S	76.8E	2565	S	96	7	7	11	3.5	6.3	7.2
89803	68.5S	102.2E	2125	S	47	12	26	60	2.5	-9.4	9.7
89860	74.2S	160.3E	1772	S	75	1	1	9	2.9	-7.5	8.0

TABLE 4

MONTHLY MONITORING OF AIRCRAFT OBSERVATIONS
MONITORING CENTRE: BRACKNELL
MONTH: August, 1996

Monitoring procedures

Period :One calendar month.

Data monitored :Statistics for each airline carrier.

Area monitored :90°N - 90°S, 180°W - 180°E.

Standard of comparison :Background field from Bracknell global model.

Observation times :All hours combined.

Level(s) monitored :70.0 - 500.0 hPa

Elements monitored :TEMP in °C ; WIND in m s^{-1}

Parameters monitored

:N REP. :Number of observations received excluding duplicates.

:PG :Percentage of observations with gross errors.

:PR :Percentage of observations rejected by quality control including rejections from the duplicate check.

:PC :Percentage of observations with calm winds.

:RMS :Root Mean Square difference of observations from background values excluding those with gross errors in Temperature & vector wind.

:BIAS :Mean difference of observations from background values excluding those with gross errors in Temperature & Wind Speed.

GROSS ERROR LIMITS :10.0 °C ; 60 m s^{-1} Vector Wind

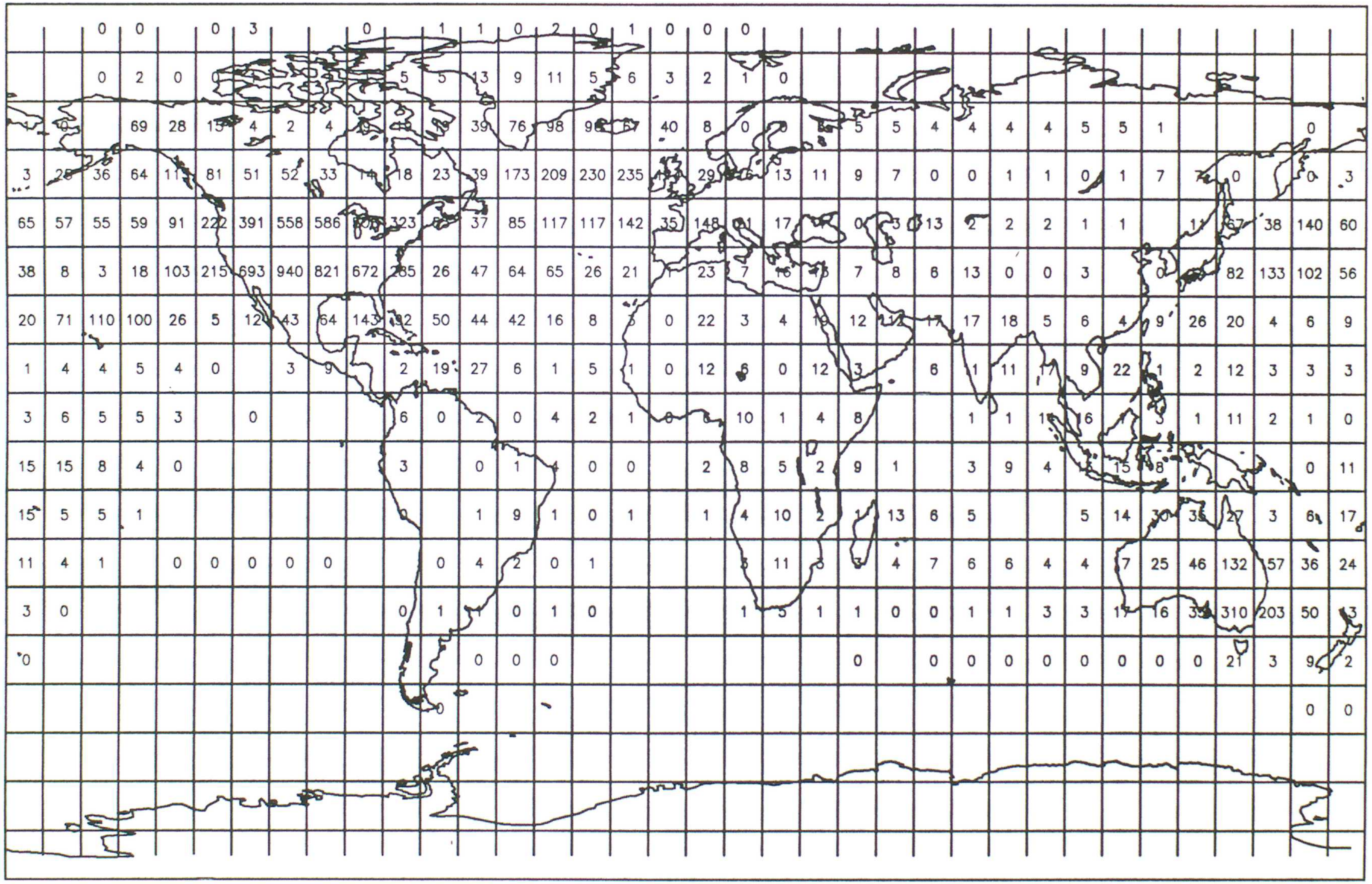
SELECTION CRITERIA :N REP $\geq$ 20

	TEMPERATURE					WIND					
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
AAA	177	3	3	1.8	0.7	176	1	3	1	10.3	1.7
AAL	5348	0	1	1.7	0.0	5346	0	2	0	7.4	1.1
AAN	322	0	2	1.4	-0.6	316	0	2	0	7.0	0.5
AAR	2178	1	2	1.6	-0.1	2139	0	3	1	8.2	1.0
ACA	2069	1	2	2.2	0.4	2111	0	2	0	7.1	0.7
ACI	39	5	8	1.8	-0.1	37	3	3	0	8.0	0.8
AEA	655	1	59	3.1	1.9	617	0	4	0	8.2	1.0
AEL	1170	1	2	1.7	-0.3	1160	0	3	0	7.4	0.9
AFL	343	1	100	3.1	1.1	343	0	5	0	8.5	1.3
AFR	1622	1	4	1.7	-0.1	1638	0	4	0	7.5	1.1
AIC	30	0	17	4.0	-0.9	31	0	42	0	17.7	10.9
AIH	198	1	2	1.5	-0.1	202	0	1	0	7.9	1.2
AME	22	0	0	1.6	-0.9	22	0	0	0	7.5	2.2
AMT	671	1	3	2.0	0.9	674	0	2	0	6.1	0.4
AMX	284	1	1	1.4	-0.2	286	0	2	0	7.9	1.0
ANA	991	1	1	1.5	-0.4	990	0	2	1	7.7	0.9
ANZ	2684	2	4	2.1	-0.1	2667	0	3	1	9.2	1.0
AOM	867	0	3	1.7	0.7	878	0	3	0	6.7	1.1
ARP	107	1	2	1.6	0.8	106	0	4	2	8.9	1.3
ATN	64	2	30	4.1	-2.1	64	0	97	0	13.7	4.8
AUA	82	1	6	1.9	-0.9	84	0	7	0	8.7	1.0
AVA	389	2	3	1.9	0.2	390	0	4	0	8.0	1.4
AVN	41	2	0	1.2	0.0	41	0	0	0	7.7	1.0
AZA	562	0	4	2.6	0.9	576	0	5	0	7.8	1.8
BAL	647	0	12	1.5	-0.6	649	0	13	0	7.2	0.6
BAW	1730	0	2	1.9	-0.1	1733	0	3	0	7.0	1.0
BBB	55	2	7	1.7	-0.6	55	0	9	0	8.1	0.9
BWA	440	1	3	2.7	1.7	443	0	4	1	7.3	1.1
CAL	2252	0	1	1.5	-0.3	2249	0	3	1	8.0	1.0
CCA	171	1	7	2.4	0.1	190	1	46	1	10.7	1.0
CDN	2939	0	1	1.9	0.3	2948	0	2	1	7.5	0.7
CES	283	0	1	1.6	0.3	285	1	5	0	9.3	0.2
CFG	948	0	1	1.8	-1.1	945	0	3	1	7.2	0.5
CKS	129	3	100	2.6	1.6	137	0	4	0	8.4	1.6
CKT	224	0	3	1.4	0.4	225	0	3	0	7.3	0.8
CLI	309	0	2	2.1	0.2	327	0	1	0	7.3	0.7
CLX	223	0	1	2.1	-0.5	228	0	3	0	8.2	1.3
CMI	975	2	4	1.9	0.3	982	0	4	3	7.8	2.0
CMM	445	0	0	1.9	0.1	445	0	3	1	7.1	1.2
COA	1078	0	2	1.7	0.5	1081	0	3	1	7.4	0.6
CPA	51	0	0	1.6	-0.7	55	0	2	0	9.7	1.9
CRL	771	1	4	1.9	0.5	772	0	5	2	7.9	1.2
CSA	25	0	0	1.7	-0.9	25	0	0	0	7.1	2.1
CTM	153	1	12	2.3	-0.3	153	0	15	0	8.1	0.7
CUB	591	0	100	2.7	1.6	592	0	16	0	10.9	2.4
DAF	30	0	7	1.5	0.1	30	0	10	3	6.8	0.7
DAL	5648	0	1	2.0	0.5	5205	0	1	0	7.3	0.9
DHL	321	1	100	3.8	-0.4	330	0	4	0	9.4	0.2
DLH	3672	0	7	2.1	0.4	3680	0	9	2	7.4	1.2
DOA	91	1	1	1.3	0.3	91	0	1	0	7.1	0.6
EHD	37	0	8	2.2	-0.5	37	0	8	0	13.8	3.9
EIA	98	1	6	1.8	-0.7	99	0	9	2	8.1	1.4
ELY	179	1	4	1.8	0.1	183	0	5	0	8.1	1.2
EVA	1548	0	1	1.6	-0.4	1608	0	3	0	7.9	0.6
EWW	176	2	100	3.8	0.7	178	0	100	0	16.6	3.7
FDX	1415	0	2	1.6	0.4	1418	0	2	0	7.6	0.8
FIN	740	0	2	2.2	0.6	736	0	4	1	7.9	1.1
FJI	532	1	1	1.5	0.4	536	0	1	0	7.8	0.6
FOM	99	1	2	2.6	0.8	100	0	2	0	15.1	0.4

	TEMPERATURE					WIND					
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
GAF	65	0	0	1.9	0.7	66	0	0	0	7.5	1.3
GHA	22	0	0	1.1	-0.1	24	0	4	0	8.2	1.1
GIA	208	1	1	1.4	0.4	215	0	4	0	8.2	1.3
GTI	54	0	0	1.7	0.2	55	0	11	0	7.7	2.0
HAL	1670	0	0	1.2	0.1	1672	0	2	1	6.7	0.3
HLF	184	0	2	1.5	-0.6	179	0	2	1	7.2	-0.1
HRH	51	2	4	1.3	0.2	50	0	4	0	12.0	0.9
IBE	3123	1	17	1.9	0.4	3093	0	18	0	8.2	0.8
ICE	655	0	1	2.0	-0.1	657	0	1	0	7.4	1.4
JAA	29	3	3	1.6	1.3	29	0	0	0	6.2	1.8
JAF	20	0	0	1.1	0.3	20	0	5	0	12.0	2.8
JAL	7710	0	1	1.7	0.1	7734	0	3	1	7.8	1.1
JAZ	122	0	1	1.8	1.1	122	0	7	5	7.2	1.3
KAC	24	0	8	2.0	0.0	24	0	13	0	15.3	1.2
KAL	4215	1	2	2.0	0.0	4207	0	3	0	8.1	0.8
KIC	246	4	6	2.1	0.0	261	0	5	0	13.1	-0.1
KIW	38	0	11	3.0	2.1	38	0	0	0	7.6	0.2
KLM	2769	0	1	1.9	0.3	2766	0	3	1	7.5	1.0
LDA	217	0	5	1.7	-1.2	215	0	5	0	6.4	0.8
LDI	185	1	15	1.8	-1.3	181	0	17	0	7.3	0.4
LIB	521	1	3	1.6	0.5	520	0	5	2	7.3	0.7
LKR	91	0	1	1.4	0.8	93	0	5	0	8.9	-0.3
LOT	408	1	2	2.3	-0.8	409	0	1	0	7.9	0.3
LTU	800	1	4	1.7	0.1	767	0	4	0	6.9	0.7
MAH	24	0	8	2.8	-0.9	24	0	4	0	8.4	3.6
MAS	367	1	2	1.6	-0.4	395	0	3	1	8.5	0.9
MDA	232	0	0	1.4	-0.1	234	0	2	0	8.0	1.0
MON	22	0	0	1.3	0.3	22	0	0	0	7.0	1.2
MPH	836	0	1	1.8	-0.2	827	0	2	0	7.1	0.8
NCA	574	1	2	1.8	0.1	571	0	2	1	8.3	1.0
NWA	11792	0	2	2.0	0.7	11762	0	4	2	8.0	1.2
OAL	57	4	4	2.6	1.2	58	0	5	0	8.9	2.8
PAC	114	0	6	2.4	0.0	122	1	6	0	6.4	1.0
PAL	1006	0	1	1.5	-0.5	1009	0	4	2	8.2	0.2
PAO	163	0	1	1.8	-0.1	163	0	1	0	7.0	0.9
PNL	97	0	2	1.8	0.4	97	0	4	0	10.4	1.0
QFA	1070	1	3	1.8	-0.1	1074	0	5	1	8.6	1.2
RAF	185	0	1	1.8	0.5	184	0	4	0	9.3	0.1
RAM	45	4	2	1.4	-1.0	45	0	0	0	7.8	0.3
RCH	590	2	97	2.8	0.8	600	0	97	0	11.2	2.5
RIA	864	1	5	2.3	1.2	895	0	10	0	10.8	1.8
RJA	79	1	1	1.9	0.5	78	0	0	0	6.7	0.6
RKA	138	3	4	1.5	-0.2	140	0	4	1	6.4	1.5
RON	22	0	0	0.9	0.5	23	0	0	0	6.5	1.3
ROT	22	0	5	2.1	-0.5	24	0	0	0	7.3	1.2
RRR	210	0	19	2.6	0.0	211	0	19	0	7.9	1.2
RSL	22	0	5	2.3	0.6	22	0	0	0	7.1	0.3
SAA	249	1	1	1.5	-0.2	249	0	3	0	7.6	1.1
SAB	78	0	5	2.1	0.1	80	0	6	0	9.8	1.8
SAS	1480	0	4	2.5	0.4	1472	0	2	0	7.1	1.0
SIA	1548	1	2	1.6	-0.8	1573	0	3	1	8.4	0.7
SLR	93	0	12	1.5	-1.0	94	0	13	0	5.9	0.1
SOL	46	0	2	1.1	0.7	46	0	7	0	9.7	2.9
SPP	160	0	14	1.8	0.0	153	0	12	0	7.4	0.6
SVA	167	0	1	1.9	0.6	175	0	2	0	9.4	1.7
SVV	24	0	13	3.1	1.6	24	0	13	0	14.3	7.0
SWR	165	2	4	1.7	0.3	169	0	4	0	9.1	1.4
TAM	30	3	3	1.7	0.0	29	0	0	0	8.0	1.4
TAP	904	0	6	1.5	-0.1	897	0	7	0	7.3	0.9

	TEMPERATURE					WIND					
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
TEJ	78	0	18	1.4	0.0	79	0	22	0	9.2	1.5
THA	353	0	0	1.5	-0.8	361	0	2	0	9.1	0.8
THY	20	5	15	2.9	1.4	22	0	18	0	10.2	-1.7
TOW	155	1	5	1.9	-0.5	157	0	6	0	9.3	1.2
TSC	253	0	43	2.6	0.1	253	0	5	0	8.4	1.3
TWA	1990	1	2	1.8	0.1	1966	0	2	0	7.7	1.3
TWE	25	4	12	2.4	-0.6	23	0	4	0	7.0	-0.1
UAL	57659	1	3	1.3	0.1	57712	0	2	0	6.1	0.7
ULE	263	0	0	1.3	0.2	256	0	2	0	7.5	0.9
UPS	946	1	10	1.6	-0.3	957	0	11	0	8.2	1.2
USA	400	0	2	1.6	-0.4	393	0	2	0	6.6	1.7
VIA	697	0	3	1.5	0.8	695	0	5	1	6.3	1.1
VIR	242	1	2	2.0	-0.3	240	0	2	0	8.1	1.9
VRG	84	1	4	1.4	0.3	85	0	5	0	9.1	0.5
VSP	216	0	1	1.6	0.4	225	0	2	0	8.5	-0.8
WOA	378	1	5	2.0	0.8	377	0	5	0	6.9	1.1
AN	22943	0	2	1.3	0.1	22809	0	2	0	7.1	0.7
BA	23890	0	8	1.2	0.4	23815	0	8	0	6.7	1.2
DL	104913	0	2	1.0	0.0	104913	0	1	0	5.7	1.0
IT	119	0	3	1.1	0.0	119	0	1	0	7.4	1.5
KL	11370	0	8	1.2	0.3	11365	0	8	0	6.6	1.2
LH	3947	0	4	1.4	0.5	3913	0	4	1	6.3	1.0
MK	4868	0	1	1.3	0.7	4838	0	1	0	8.3	0.1
NW	37518	0	1	1.2	0.2	37518	0	1	0	5.6	0.9
QF	9304	0	1	1.1	0.3	9292	0	1	0	6.6	0.8
SA	1856	0	0	1.2	0.7	1855	0	0	0	7.7	1.5
SV	1661	0	0	1.1	0.7	1648	0	0	0	6.0	0.5
N	398	1	7	2.9	0.7	423	0	5	0	8.6	1.2

MEAN DAILY COUNT OF AIRCRAFT 70 – 500 HPA FIGURE 3
AUGUST 1996
OBSERVATIONS WITH O–B VECTOR DIFFERENCE GREATER THAN 60 MPS EXCLUDED


0 0 0 3 0 1 1 0 2 0 1 0 0 0
0 2 0 0 5 5 13 9 11 5 6 3 2 1 0
10 69 28 15 4 2 4 39 76 98 96 67 40 8 0 5 5 4 4 4 4 5 5 1 0
3 36 64 81 51 52 33 18 23 39 173 209 230 235 29 13 11 9 7 0 0 1 1 0 1 7 0 0 3
65 57 55 59 91 222 391 558 586 323 37 85 117 117 142 35 148 17 0 3 13 2 2 2 1 1 11 67 38 140 60
38 8 3 18 103 215 693 940 821 672 285 26 47 64 65 26 21 23 7 7 8 6 13 0 0 3 0 82 133 102 56
20 71 110 100 26 5 12 43 64 143 132 50 44 42 16 8 0 22 3 4 19 12 12 17 17 18 5 6 4 9 26 20 4 6 9
1 4 4 5 4 0 3 9 2 19 27 6 1 5 1 0 12 6 0 12 3 6 1 11 17 9 22 1 2 12 3 3 3
3 6 5 5 3 0 6 0 2 0 4 2 1 10 1 4 8 1 1 16 3 1 11 2 1 0
15 15 8 4 0 3 0 1 4 0 0 2 8 5 2 9 1 3 9 4 15 8 0 11
15 5 5 1 1 9 1 0 1 1 4 10 2 13 6 5 5 14 30 35 27 3 6 17
11 4 1 0 0 0 0 0 0 4 2 0 1 11 4 7 6 6 4 4 7 25 46 132 57 36 24
3 0 0 1 1 0 1 0 1 5 1 1 0 0 1 1 3 3 17 16 35 310 203 50 13
0 0 0 0 0 0 0 0 0 0 0 0 0 0 21 3 9 2
0 0 0

AIRCRAFT MEAN WINDS BETWEEN 70 AND 500 HPA

AUGUST 1996

OBSERVATIONS WITH O-B VECTOR DIFFERENCE GREATER THAN 60 MPS EXCLUDED

VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT

FIGURE 4

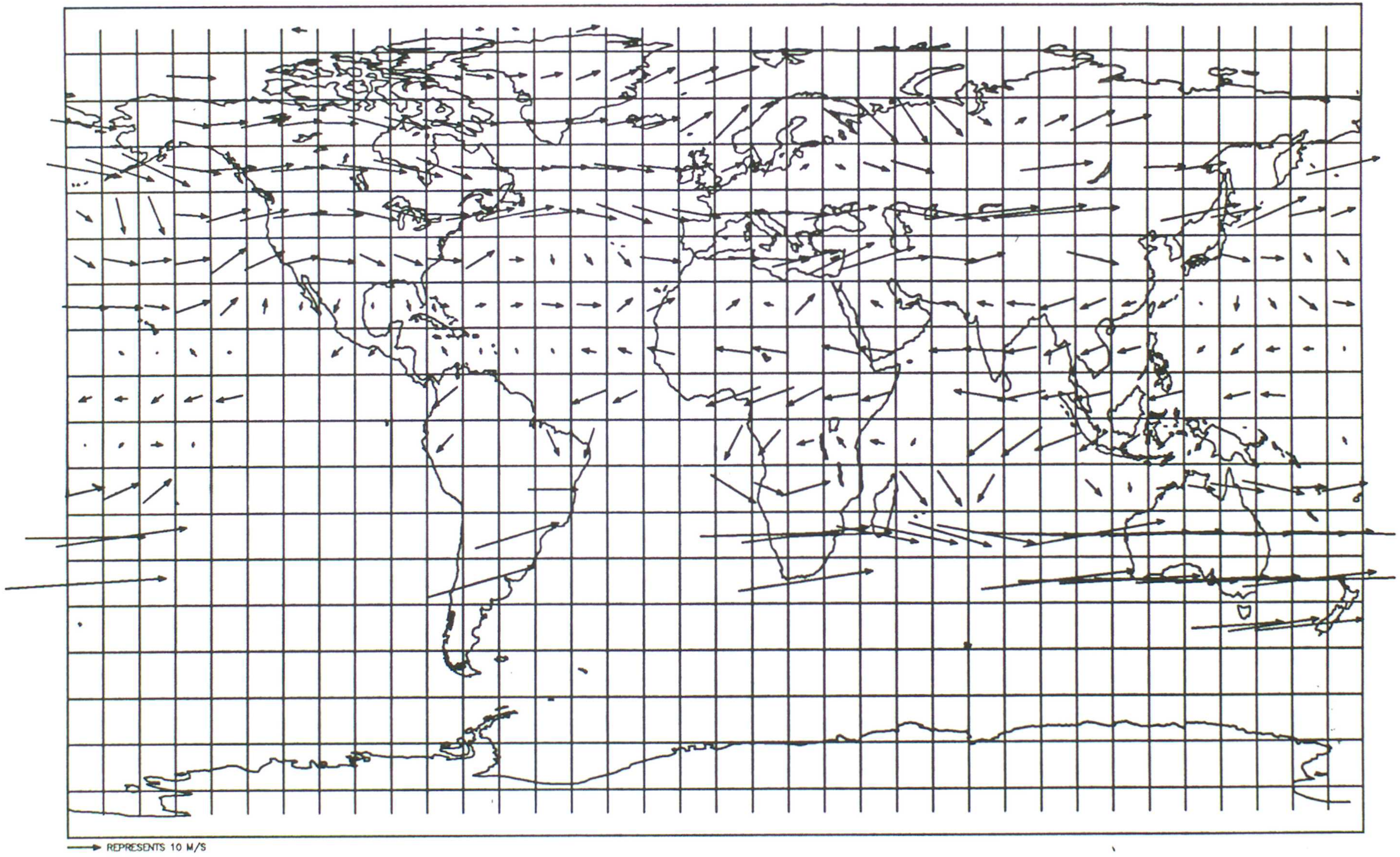
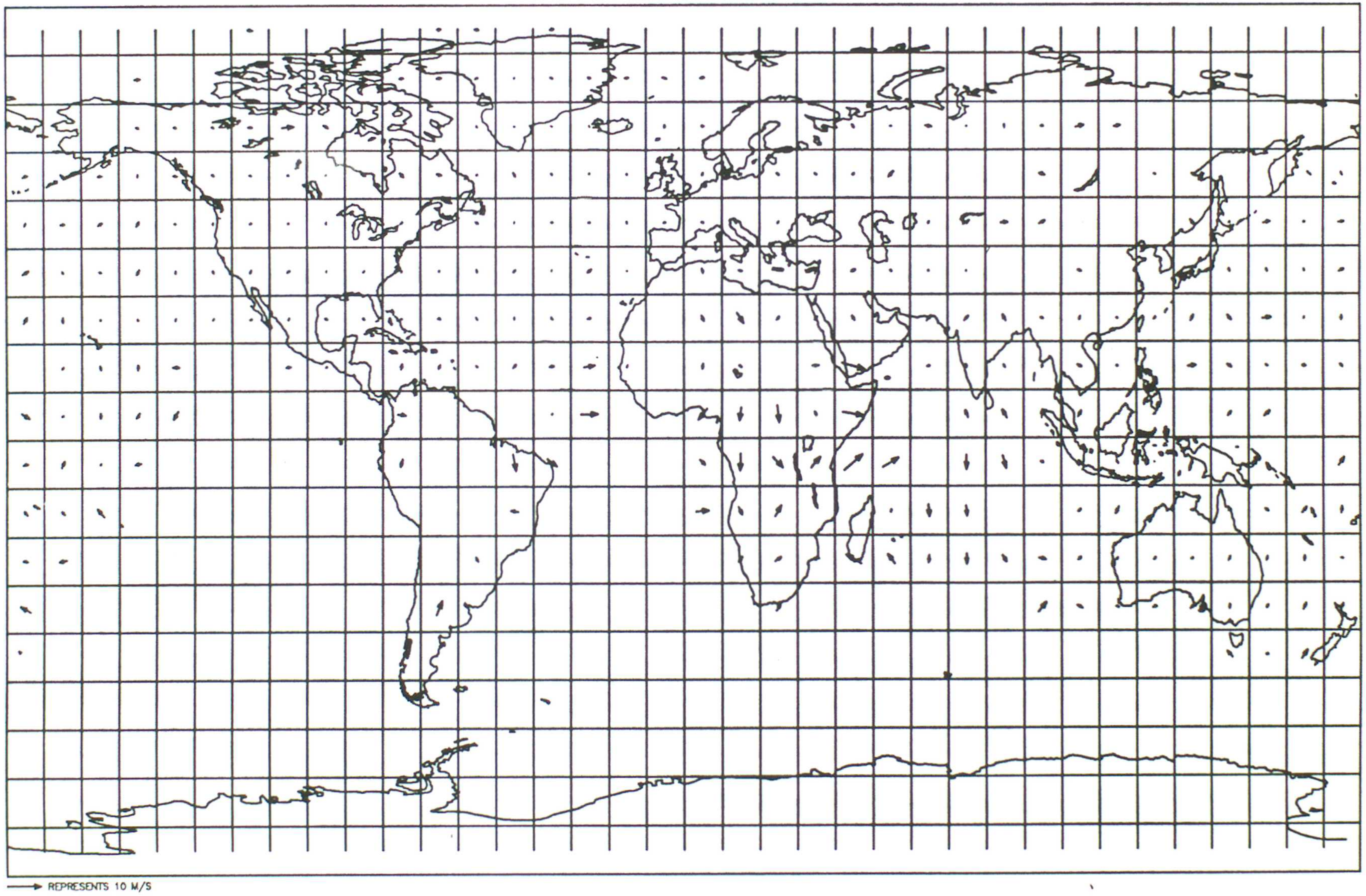


FIGURE 5

AIRCRAFT MEAN O-B WINDS BETWEEN 70 AND 500 HPA
AUGUST 1996
OBSERVATIONS WITH O-B VECTOR DIFFERENCE GREATER THAN 60 MPS EXCLUDED
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT

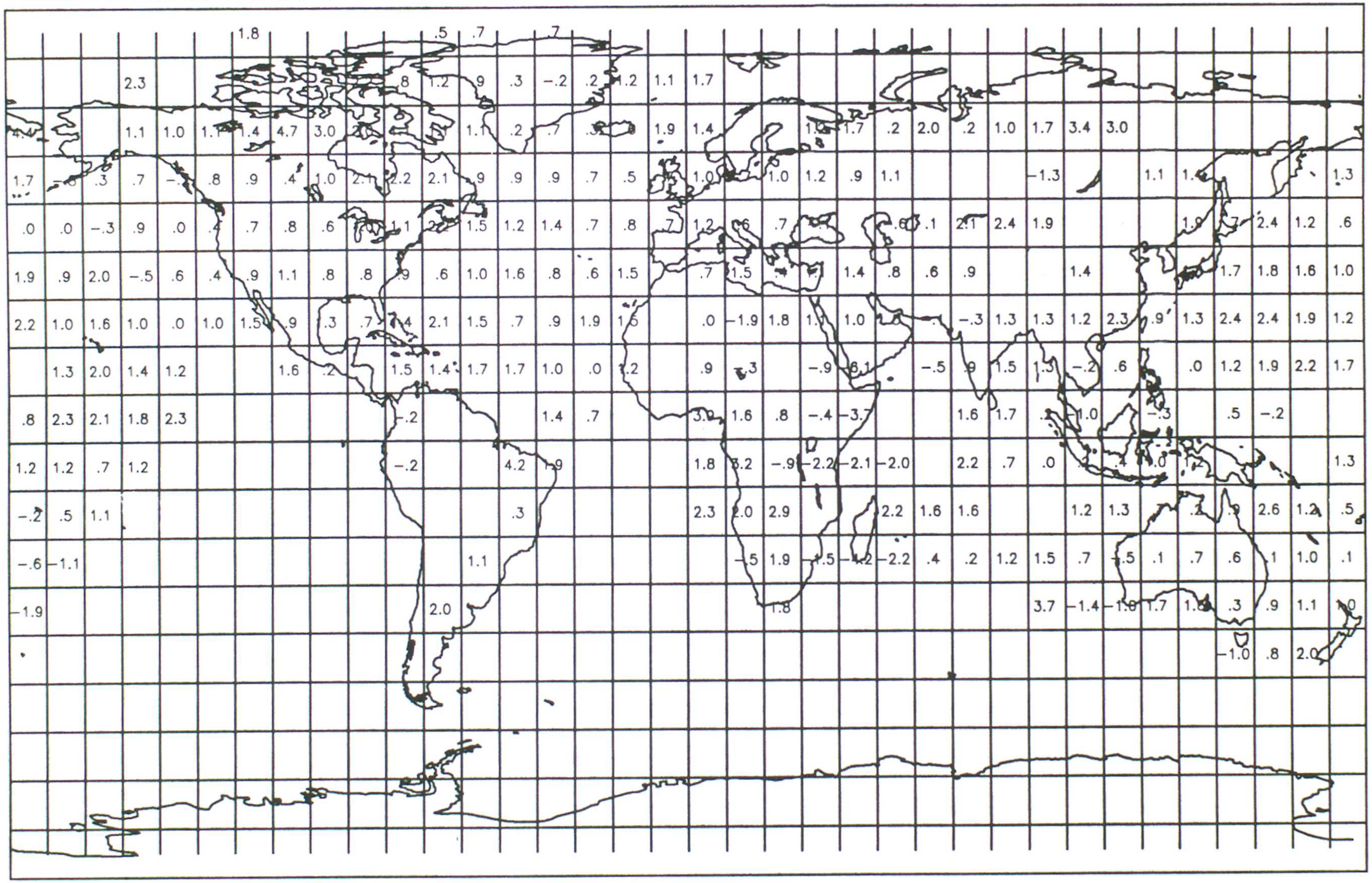


AIRCRAFT : MEAN O–B SPEEDS (M/S) BETWEEN 70 AND 500 HPA FIGURE 6

AUGUST 1996

OBSERVATIONS WITH O–B VECTOR DIFFERENCE > 60 MPS EXCLUDED

VALUES ARE PRINTED WHERE > 30 OBS ARE PRESENT


1.8 .5 .7 .7
2.3 .8 1.2 .9 .3 −.2 .2 1.2 1.1 1.7
1.1 1.0 1.1 1.4 4.7 3.0 1.1 .2 .7 1.9 1.4 1.7 .2 2.0 .2 1.0 1.7 3.4 3.0
1.7 .3 .7 .8 .9 .4 1.0 2.1 2.2 2.1 .9 .9 .9 .7 .5 1.0 1.0 1.2 .9 1.1 −1.3 1.1 1.3
.0 .0 −.3 .9 .0 .4 .7 .8 .6 1.1 1.5 1.2 1.4 .7 .8 .7 1.2 .6 .7 .6 .1 2.1 2.4 1.9 1.9 2.4 1.2 .6
1.9 .9 2.0 −.5 .6 .4 .9 1.1 .8 .8 .9 .6 1.0 1.6 .8 .6 1.5 .7 1.5 1.4 .8 .6 .9 1.4 1.7 1.8 1.6 1.0
2.2 1.0 1.6 1.0 .0 1.0 1.5 .9 .3 .7 .4 2.1 1.5 .7 .9 1.9 1.6 .0 −1.9 1.8 1.0 −.3 1.3 1.3 1.2 2.3 .9 1.3 2.4 2.4 1.9 1.2
1.3 2.0 1.4 1.2 1.6 .2 1.5 1.4 1.7 1.7 1.0 .0 1.2 .9 .3 −.9 6.1 −.5 .9 1.5 1.3 −.2 .6 .0 1.2 1.9 2.2 1.7
.8 2.3 2.1 1.8 2.3 −.2 1.4 .7 3.0 1.6 .8 −.4 −3.7 1.6 1.7 1.0 −.3 .5 −.2
1.2 1.2 .7 1.2 −.2 4.2 1.9 1.8 3.2 −.9 −2.2 −2.1 −2.0 2.2 .7 .0 1.0 1.3
−.2 .5 1.1 .3 2.3 2.0 2.9 2.2 1.6 1.6 1.2 1.3 .2 .9 2.6 1.2 .5
−.6 −1.1 1.1 −.5 1.9 −1.5 −1.2 −2.2 .4 .2 1.2 1.5 .7 −.5 .1 .7 .6 .1 1.0 .1
−1.9 2.0 1.8 3.7 −1.4 −1.8 1.7 1.8 .3 .9 1.1 1.0
−1.0 .8 2.0

AIRCRAFT : RMS O–B VECTOR (M/S) BETWEEN   70 AND   500 HPA   FIGURE 7
AUGUST 1996
OBSERVATIONS WITH O–B VECTOR DIFFERENCE GREATER THAN 60 MPS EXCLUDED
VALUES ARE PRINTED WHERE > 30 OBS ARE PRESENT

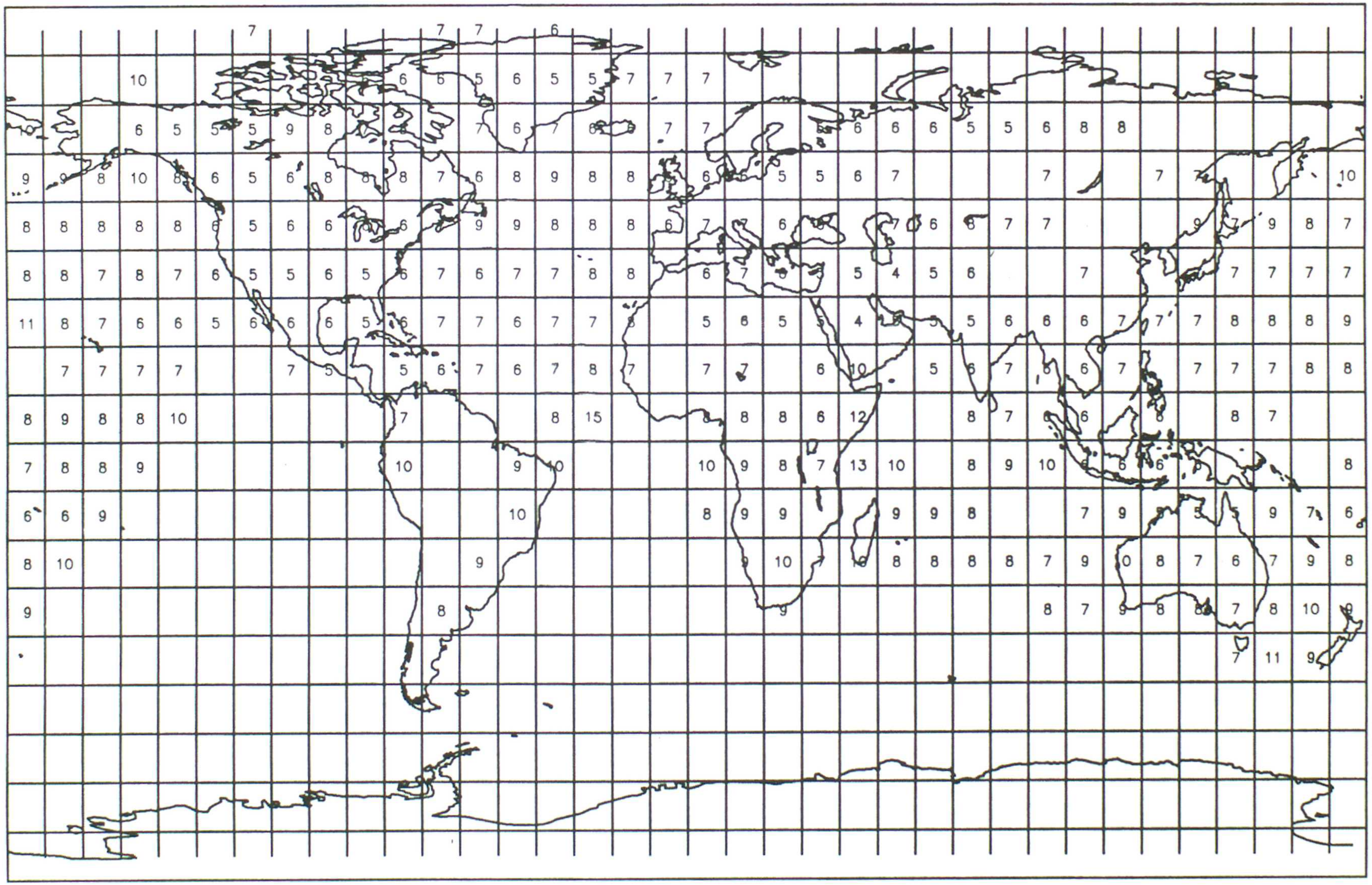

7 7 7 6
10 6 6 5 6 5 5 7 7 7
10 6 5 5 5 9 8 8 7 6 7 6 9 7 7 5 6 6 6 5 5 6 8 8
9 9 8 10 8 6 5 6 8 8 8 7 6 8 9 8 8 6 6 5 5 6 7 7 7 7 10
8 8 8 8 8 6 5 6 6 6 6 9 9 8 8 8 6 7 7 6 6 7 6 6 7 7 9 7 9 8 7
8 8 7 8 7 6 5 5 6 5 6 7 6 7 7 8 8 6 7 6 5 5 4 5 6 7 7 7 7 7
11 8 7 6 6 5 6 6 6 5 6 7 7 6 7 7 8 5 6 5 5 4 6 5 5 6 6 6 7 7 7 8 8 8 9
7 7 7 7 7 5 5 6 7 6 7 8 7 7 7 6 10 5 6 7 6 6 7 7 7 7 8 8
8 9 8 8 10 7 8 15 8 8 8 6 12 8 7 6 6 6 8 7
7 8 8 9 10 9 10 10 9 8 7 13 10 8 9 10 6 6 6 8
6 6 9 10 8 9 9 9 9 8 7 9 9 5 5 9 7 6
8 10 9 9 10 7 10 8 8 8 8 7 9 10 8 7 6 7 9 8
9 8 9 8 7 9 8 8 7 8 10 9
7 11 9

TABLE 5

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS
MONITORING CENTRE: BRACKNELL
MONTH: August, 1996

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from each unique identifier for radiosonde TEMPs.

Area monitored :90°N - 90°S, 180°W - 180°E.

Standard of comparison :Background field from Bracknell global model.

Observation times :00 UTC and 12 UTC.

Level(s) monitored :Standard levels between 1000.0 - 30.0 hPa

Element monitored :GEOPOTENTIAL HEIGHT IN metres

Parameters monitored

- :NUM OBS :Number of observations available at level shown during period.
- :NUM GROSS :Number of gross errors at level shown duringperiod.
- :% REJ :Percentage of observations rejected by quality control at level shown during period.
- :SD :SD of difference of observations from background values at level shown excluding those with gross errors.
- :BIAS :Mean difference of observations from background values at level shown excluding those with gross errors.
- :RMS :Root Mean Square difference of observations from background values at level shown excluding those with gross errors.
- :NUM LEVELS :Number of levels satisfying selection criteria.

GROSS ERROR LIMITS :Defined in Appendix I.1

SELECTION CRITERIA : ≥3 levels with ≥10 observations and ≥ 100 m weighted RMS.

ONLY THE WORST LEVEL IS SHOWN WITH UNWEIGHTED RMS

WMO IDENT	OBS TIME	ELM	LEV	LAT/LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS	NUM LEVELS
23933	12	Z	30	61/ 69	16	0	53.2	214.7	221.2	5
33791	12	Z	200	43/ 33	19	1	95.6	-54.1	109.8	10
38507	00	Z	200	40/ 53	19	0	60.9	57.8	83.9	6
41977	00	Z	850	22/ 92	20	0	39.9	5.5	40.3	4
42027	00	Z	100	34/ 75	9	2	136.3	-40.8	142.3	6
42027	12	Z	200	34/ 75	13	1	89.8	-17.7	91.5	4
42101	00	Z	400	30/ 76	27	1	35.4	-56.4	66.6	8
42314	12	Z	100	27/ 95	20	0	121.4	-31.8	125.5	7
42369	00	Z	200	27/ 81	17	0	88.6	9.8	89.2	11
42369	12	Z	70	27/ 81	10	2	113.3	104.6	154.2	7
42379	00	Z	50	27/ 83	14	0	106.9	160.9	193.2	9
42379	12	Z	30	27/ 83	14	0	128.7	256.4	286.8	9
42492	12	Z	30	26/ 85	13	0	149.9	117.3	190.4	8
42647	00	Z	150	23/ 73	13	1	105.8	-65.2	124.3	4
43014	00	Z	150	20/ 75	12	0	100.3	-56.1	114.9	4
43128	00	Z	100	17/ 78	11	1	159.7	73.2	175.7	6
43128	12	Z	150	17/ 78	15	1	128.0	35.5	132.8	7
43192	00	Z	400	15/ 74	15	0	55.0	-42.1	69.3	6
43279	00	Z	200	13/ 80	27	0	62.1	-92.1	111.1	9
43279	12	Z	250	13/ 80	27	0	46.6	-75.4	88.7	7
43285	00	Z	30	13/ 75	14	0	165.3	138.9	215.9	4
43295	00	Z	70	13/ 78	14	0	140.0	31.8	143.5	4
43311	00	Z	250	11/ 73	14	1	65.6	-56.6	86.6	5
43353	00	Z	100	10/ 76	15	1	127.7	-54.5	138.8	6
43371	00	Z	50	8/ 77	15	0	95.0	-166.1	191.4	5
48407	00	Z	850	15/ 105	29	0	30.5	35.0	46.4	4
50527	12	Z	70	49/ 120	29	1	104.7	134.1	170.2	6
52836	00	Z	100	36/ 98	28	1	76.9	123.6	145.6	5
52836	12	Z	100	36/ 98	27	1	50.1	144.6	153.0	6
54497	00	Z	30	40/ 124	23	0	109.1	195.9	224.2	5
56985	12	Z	100	23/ 103	29	0	39.3	128.0	133.9	5
57749	00	Z	100	28/ 110	28	0	53.3	125.2	136.1	4
58203	00	Z	70	33/ 116	29	0	109.2	82.3	136.8	4
61998	12	Z	400	-49/ 70	29	0	47.3	41.3	62.8	4
62306	00	Z	100	31/ 27	27	1	124.1	98.7	158.6	5
62306	12	Z	200	31/ 27	26	1	87.9	96.5	130.5	8
62378	12	Z	70	30/ 31	14	4	115.1	221.0	249.2	7
62414	00	Z	50	24/ 33	21	2	119.7	120.2	169.6	5
68240	12	Z	250	-24/ 26	12	0	95.8	-48.8	107.6	7
85934	12	Z	300	-53/ -71	29	0	36.5	79.1	87.1	4
88889	12	Z	300	-52/ -58	31	0	34.3	67.3	75.6	4
89009	00	Z	300	-90/ 0	17	1	60.4	78.9	99.3	6
89050	00	Z	250	-62/ -59	25	1	53.4	87.4	102.4	10
89571	12	Z	400	-69/ 78	24	0	65.8	12.9	67.1	4
89611	00	Z	850	-66/ 111	29	1	35.7	-20.8	41.3	6
89642	00	Z	1000	-67/ 140	5	0	37.3	19.8	42.2	7
96163	00	Z	200	-1/ 100	16	1	97.4	-39.0	105.0	6

AVAILABILITY – TEMP – 500 HPA GEOPOTENTIAL – AUGUST 1996

FIGURE 8

ALL HOURS

10 DEGREE BOX AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS

TOTAL AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS – 1324

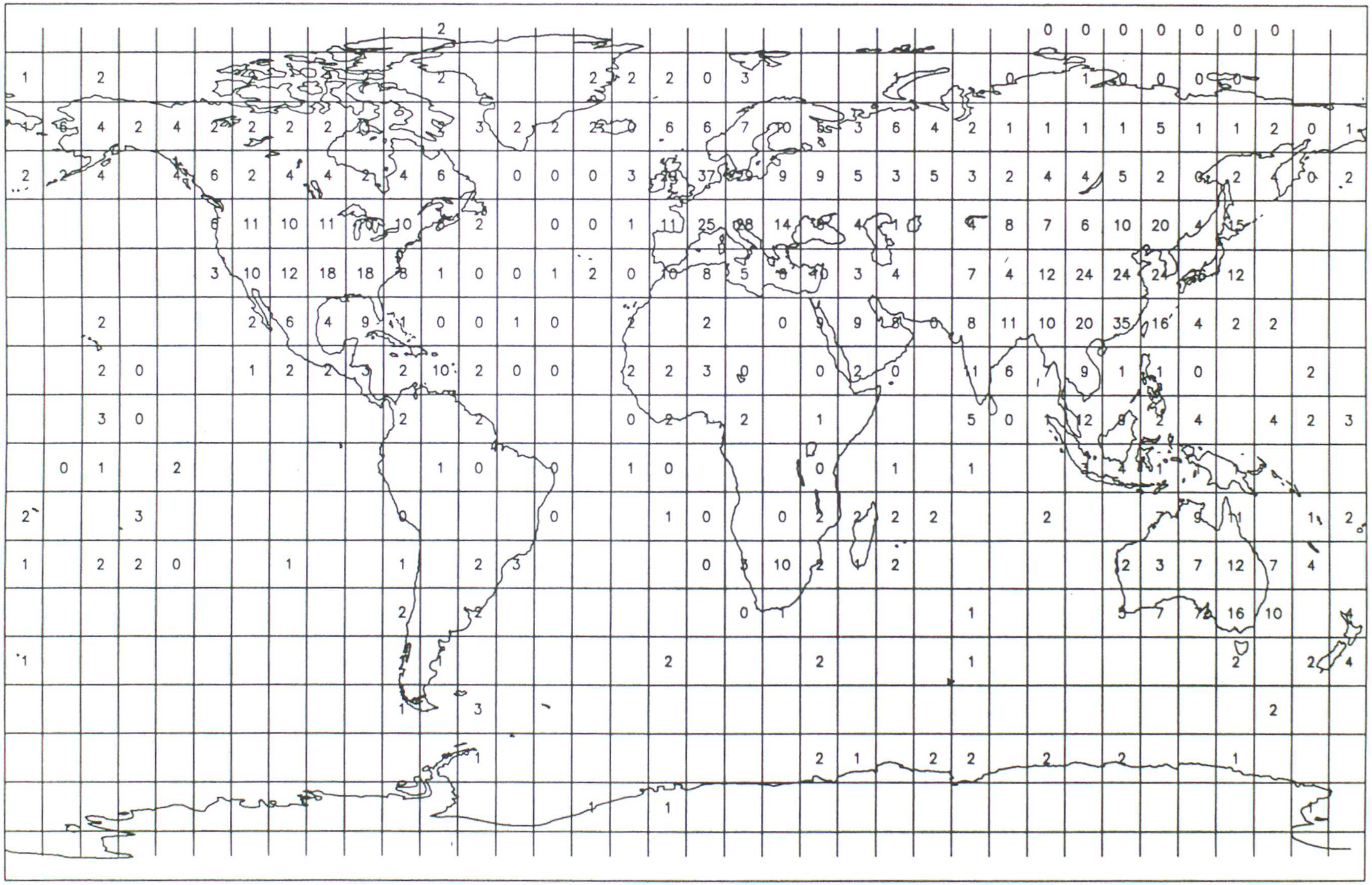


TABLE 6

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS
MONITORING CENTRE: BRACKNELL
MONTH: August, 1996

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from each unique identifier for radiosonde TEMPs.

Area monitored :90°N - 90°S, 180°W - 180°E.

Standard of comparison :Background field from Bracknell global model.

Observation times :00 UTC and 12 UTC.

Level(s) monitored :Standard levels between 1000.0 - 100.0 hPa

Element monitored :VECTOR WIND in m s^{-1}

Parameters monitored

:NUM OBS :Number of observations available at level shown during period.

:NUM GROSS :Number of gross errors at level shown during period.

:% REJ :Percentage of observations rejected by quality control at level shown during period.

:UBIAS,VBIAS :Mean difference of observations of U and V components from background values at level shown excluding those with gross errors.

:RMS :Root Mean Square difference of observations from background values at level shown excluding those with gross errors.

:NUM LEVELS :Number of levels satisfying selection criteria.

GROSS ERROR LIMITS :Defined in Appendix I.2

SELECTION CRITERIA : $\geq$ 10 observations and $\geq$ 15 m s^{-1} RMS vector wind.

ONLY THE STANDARD LEVEL BETWEEN 1000 - 100 hPa WITH HIGHEST RMS IS SHOWN

WMO IDENT	OBS TIME	ELM	LEV	LAT/LONG	NUM OBS	NUM GROSS	% REJ	UBIAS	VBIAS	RMS	LEVELS
33791	12	V	250	43/ 33	20	0	50	-19.0	-6.0	16.9	2
68240	12	V	150	-24/ 26	12	0	25	-11.4	0.9	17.6	1
71823	00	V	300	54/ -74	19	0	15	7.2	1.3	16.0	1

AVAILABILITY – TEMP/PILOT – 300 HPA WIND – AUGUST 1996

ALL HOURS

10 DEGREE BOX AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS

TOTAL AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS – 1178

FIGURE 9

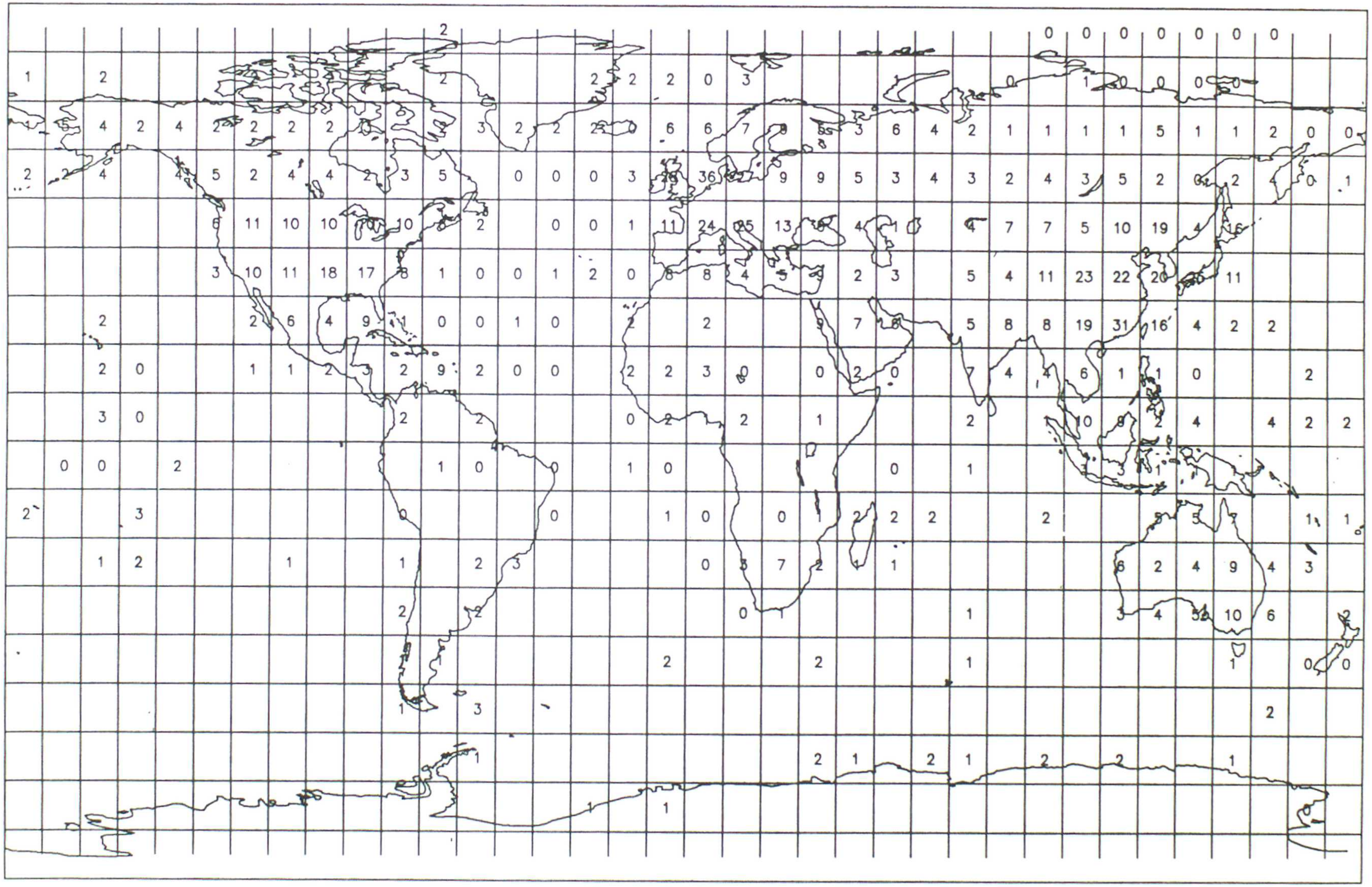


TABLE 7

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS
MONITORING CENTRE: BRACKNELL
MONTH: August, 1996

Monitoring procedures

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for radiosonde TEMPs.
Area monitored		:90°N - 90°S, 180°W - 180°E.
Standard of comparison		:Background field from Bracknell global model.
Observation times		:00 UTC and 12 UTC.
Level(s) monitored		:Standard levels between 500.0 - 150.0 hPa
Element monitored		:WIND DIRECTION in degrees
Parameters monitored		
	:NUM OBS	:Average number of observations at all levels.
	:BIAS	:Mean difference of observations from background values from all levels.
	:MAX SPREAD	:(For observation - background values) Maximum absolute difference of SD at any level from SD at all levels
	:SD	:SD of difference of observations from background values at all levels.

SELECTION CRITERIA :NUM OBS ≥ 5, and
ABSOLUTE BIAS ≥ 10°, with
SD < 30°, and
MAX SPREAD < 10°

WMO IDENT	OBS TIME	ELM	LAT/LONG	NUM OBS	BIAS	MAX SPREAD	SD
01241	00	DD	64/ 10	25	-11.8	4.5	17.9
01400	00	DD	57/ 3	25	-10.1	2.3	12.9
08221	12	DD	40/ -4	27	-10.6	4.4	14.8
31873	00	DD	46/ 134	21	10.6	5.3	13.4
40179	00	DD	32/ 35	28	-10.3	2.7	13.6
48407	00	DD	15/ 105	17	-14.2	6.3	21.9
53614	00	DD	38/ 106	27	-10.5	3.8	16.0
60360	12	DD	37/ 8	9	11.3	2.8	13.7
60490	12	DD	36/ -1	20	-11.8	2.9	11.8
61052	00	DD	13/ 2	22	-12.8	5.6	26.2
61291	00	DD	13/ -8	15	-13.2	8.2	29.3
61641	00	DD	15/ -17	20	10.3	5.0	24.1
64650	12	DD	4/ 19	12	-13.5	4.1	21.5
71043	00	DD	65/-127	23	12.2	6.0	12.9
71043	12	DD	65/-127	22	10.4	9.9	16.2
72402	12	DD	38/ -75	20	-10.1	2.8	21.3
80001	12	DD	13/ -82	5	12.4	8.7	21.9
97724	12	DD	-4/ 128	11	10.1	7.8	19.1

MONITORING OF SATELLITE WINDS

MONITORING CENTRE: BRACKNELL

MONTH: August, 1996

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from GOES, METEOSAT, GMS, INSAT.

Standard of comparison :Background field from Bracknell global model.

Selection Criteria :number of observations > 10.

Data Extracted :Layer 701 - 1000 hPa
401 - 700 hPa
101 - 400 hPa

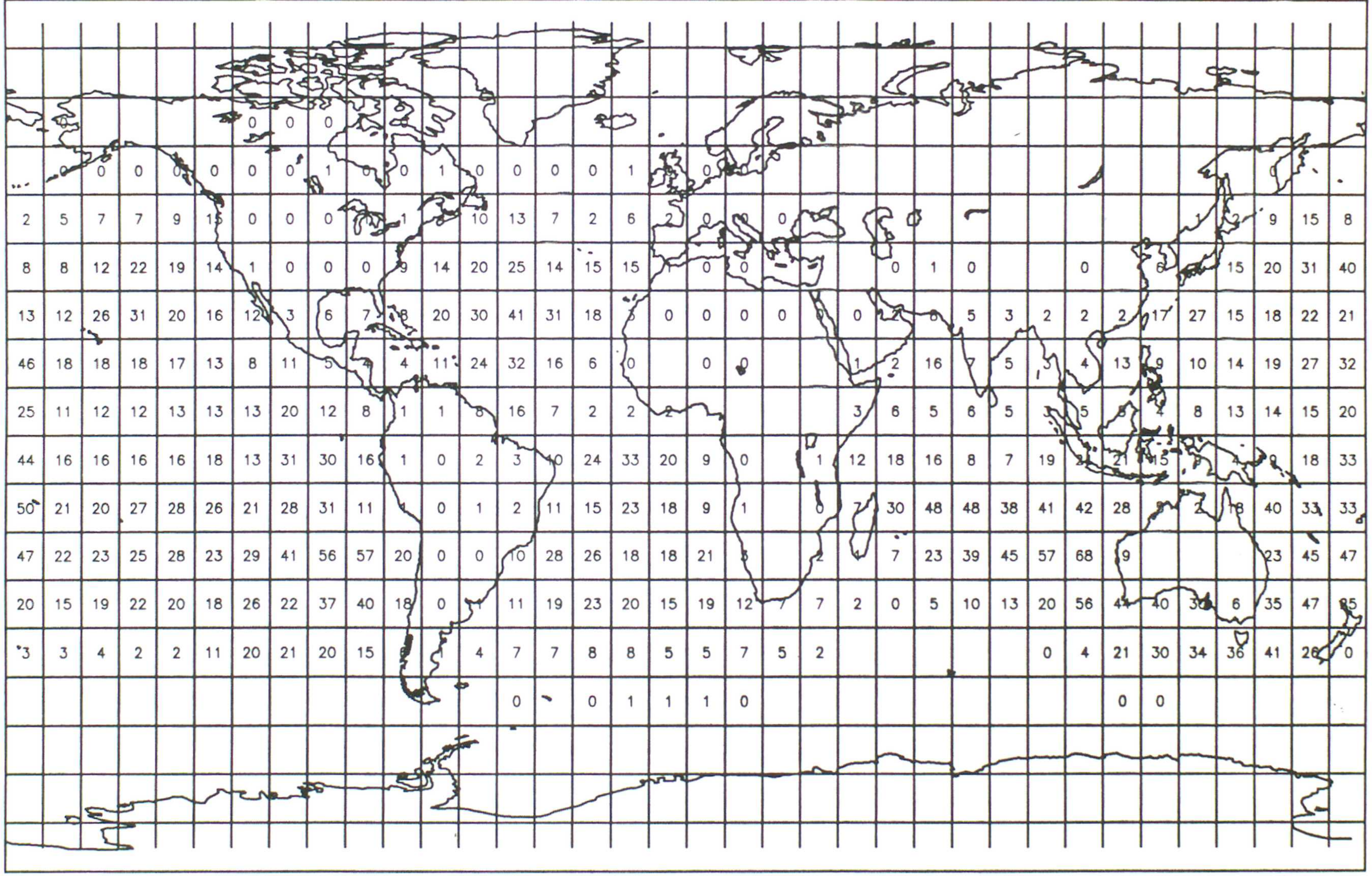
:Mean wind

:Mean observation minus background vector wind differences

:Mean observation minus background speed differences

:RMS of observation minus background vector differences

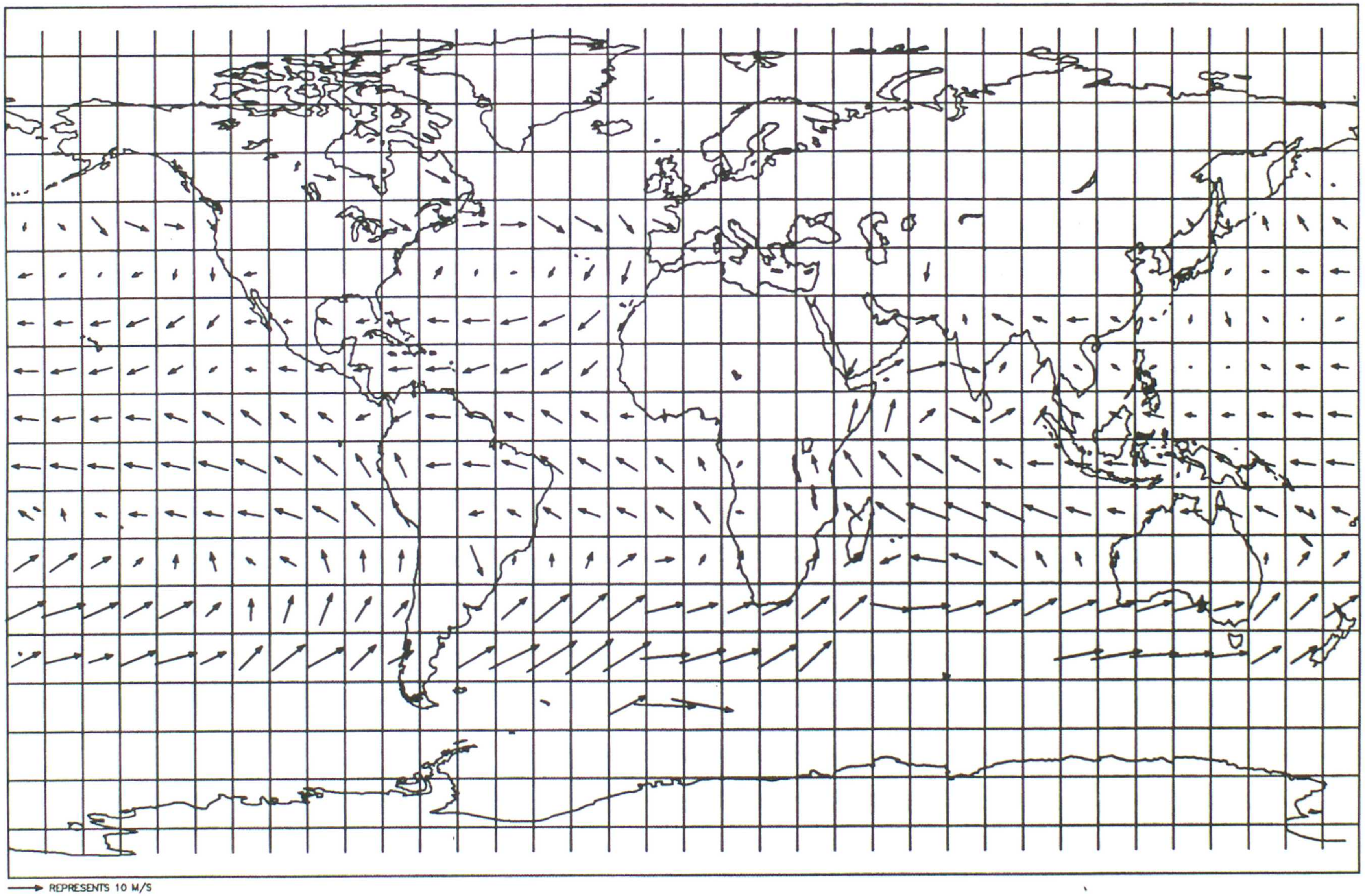
AVERAGE DAILY NUMBER OF SATOB OBSERVATIONS BETWEEN 701 AND 1000 HPA FIGURE 10
AUGUST 1996



	0					0	0	0		0																									
	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0															0		
2	5	7	7	9	15	0	0	0	1	1		10	13	7	2	6	2	0	0	0											1	2	9	15	8
8	8	12	22	19	14	1	0	0	0	9	14	20	25	14	15	15	1	0	0				0	1	0			0		6		15	20	31	40
13	12	26	31	20	16	12	3	6	7	8	20	30	41	31	18	3	0	0	0	0	0	0	2	8	5	3	2	2	2	17	27	15	18	22	21
46	18	18	18	17	13	8	11	5	4	4	11	24	32	16	6	0		0	0			1	2	16	7	5	3	4	13	9	10	14	19	27	32
25	11	12	12	13	13	13	20	12	8	1	1	8	16	7	2	2	2					3	6	5	6	5	3	5	8	4	8	13	14	15	20
44	16	16	16	16	18	13	31	30	16	1	0	2	3	10	24	33	20	9	0		1	12	18	16	8	7	19	21	21	15	9	4	9	18	33
50	21	20	27	28	26	21	28	31	11	1	0	1	2	11	15	23	18	9	1		0	7	30	48	48	38	41	42	28	9	2	18	40	33	33
47	22	23	25	28	23	29	41	56	57	20	0	0	10	28	26	18	18	21	3		2	1	7	23	39	45	57	68	9				23	45	47
20	15	19	22	20	18	26	22	37	40	18	0	1	11	19	23	20	15	19	12	7	7	2	0	5	10	13	20	56	44	40	30	6	35	47	35
3	3	4	2	2	11	20	21	20	15	6	1	4	7	7	8	8	5	5	7	5	2						0	4	21	30	34	36	41	26	0
													0		0	1	1	1	0										0	0					

SATOB VECTOR MEAN WINDS BETWEEN 701–1000 HPA
AUGUST 1996
ALL OBSERVATIONS
ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT

FIGURE 11


REPRESENTS 10 M/S

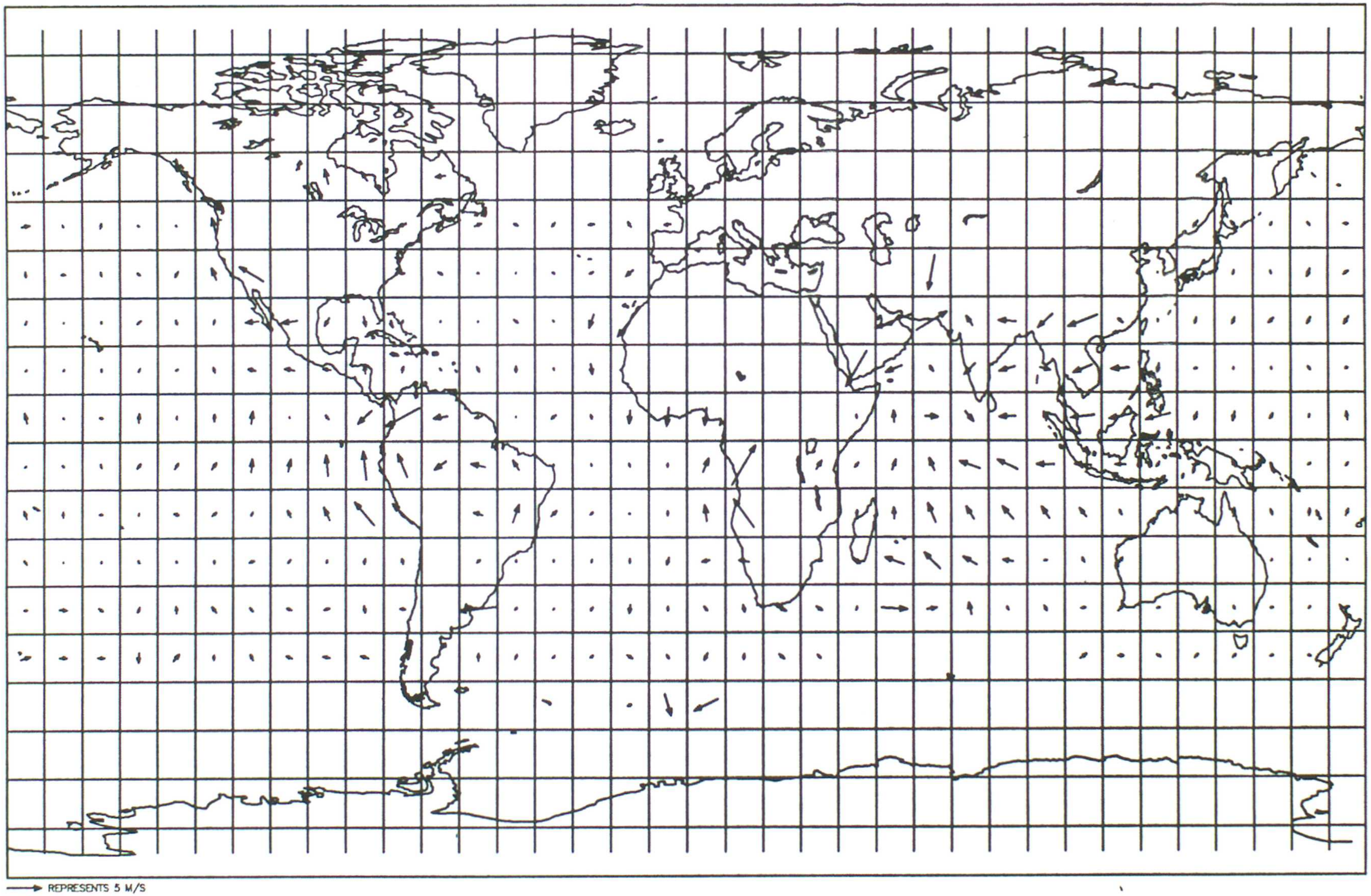
SATOB O–B VECTOR WIND DIFFERENCES BETWEEN 701–1000 HPA

AUGUST 1996

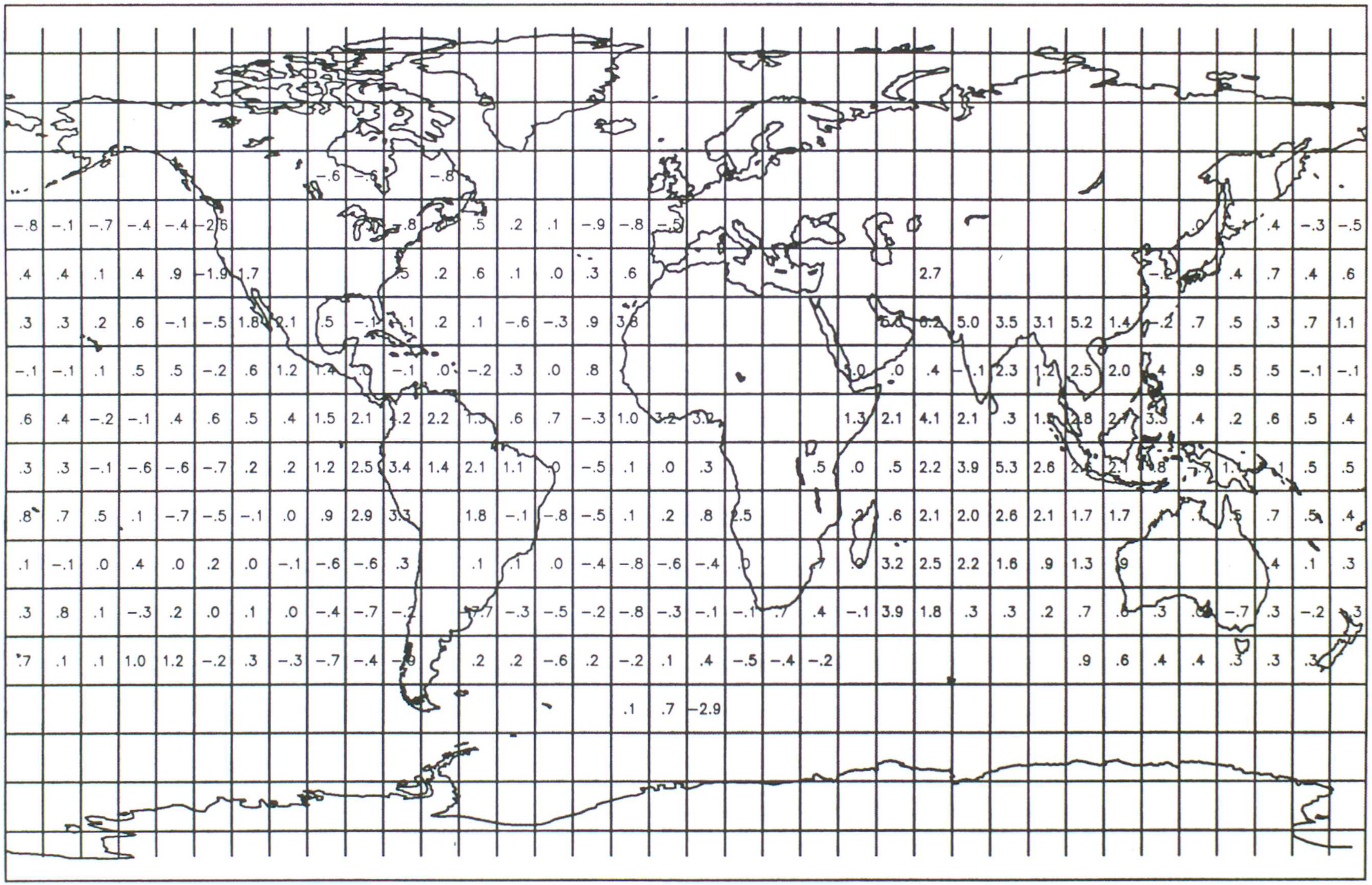
ALL OBSERVATIONS

ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT

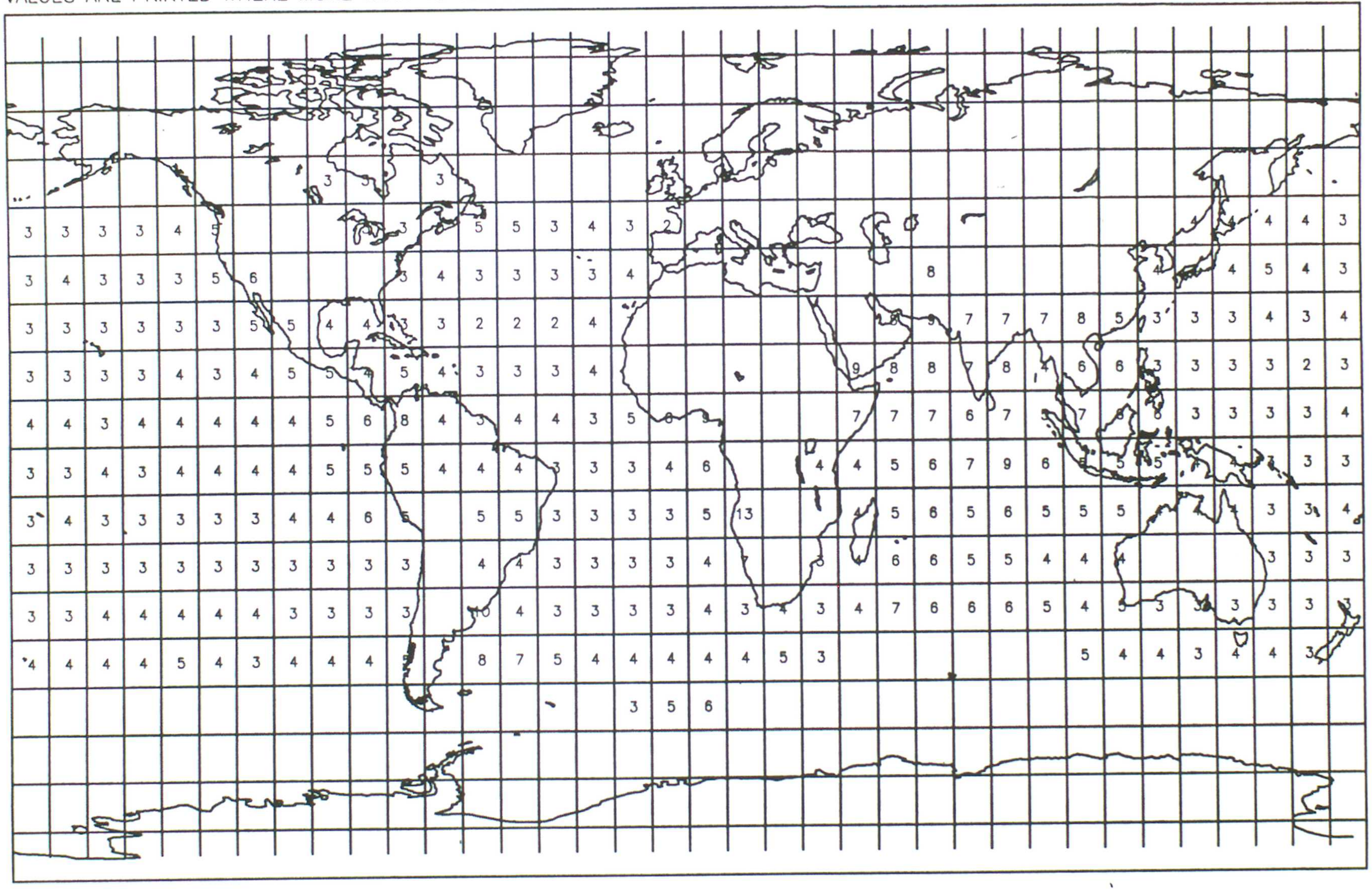
FIGURE 12



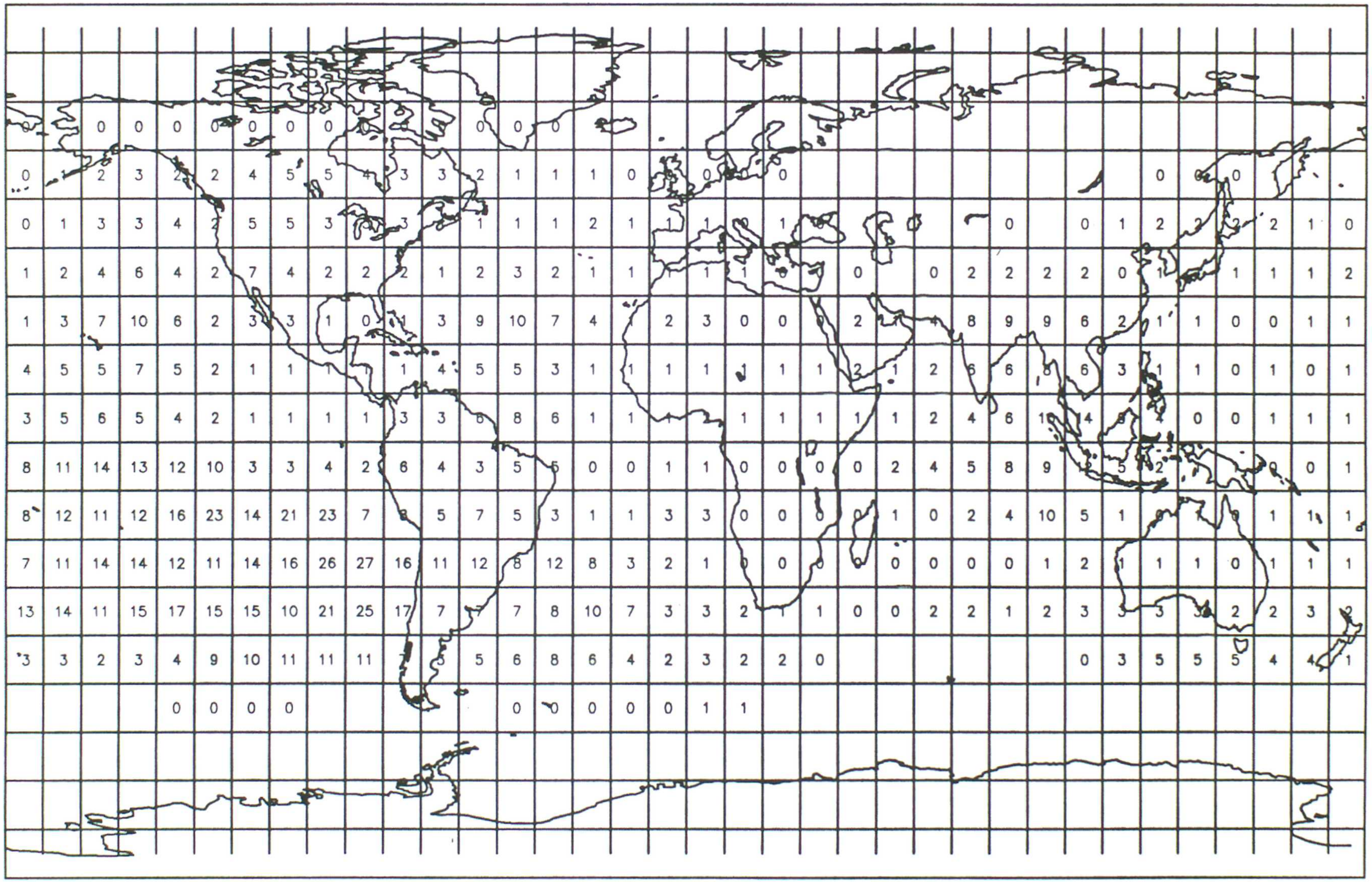
SATOBS : MEAN O–B SPEED DIFFERENCES (M/S) BETWEEN 701 AND 1000 HPA FIGURE 13
AUGUST 1996
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT


-.6 -.6 -.8
-.8 -.1 -.7 -.4 -.4 -2.6 -.8 .5 .2 .1 -.9 -.8 -.5 .4 -.3 -.5
.4 .4 .1 .4 .9 -1.9 1.7 .5 .2 .6 .1 .0 .3 .6 2.7 -.2 .4 .7 .4 .6
.3 .3 .2 .6 -.1 -.5 1.8 2.1 .5 -.1 .1 .2 .1 -.6 -.3 .9 3.8 5.6 6.2 5.0 3.5 3.1 5.2 1.4 -.2 .7 .5 .3 .7 1.1
-.1 -.1 .1 .5 .5 -.2 .6 1.2 1.4 .0 -.1 .0 -.2 .3 .0 .8 3.0 .0 .4 -.1 2.3 1.2 2.5 2.0 .4 .9 .5 .5 -.1 -.1
.6 .4 -.2 -.1 .4 .6 .5 .4 1.5 2.1 4.2 2.2 1.3 .6 .7 -.3 1.0 3.2 3.2 1.3 2.1 4.1 2.1 .3 1.5 2.8 2.7 3.3 .4 .2 .6 .5 .4
.3 .3 -.1 -.6 -.6 -.7 .2 .2 1.2 2.5 3.4 1.4 2.1 1.1 .0 -.5 .1 .0 .3 .5 .0 .5 2.2 3.9 5.3 2.6 2.6 2.1 1.8 -.7 1.1 .1 .5 .5
.8 .7 .5 .1 -.7 -.5 -.1 .0 .9 2.9 3.3 1.8 -.1 -.8 -.5 .1 .2 .8 2.5 .2 .6 2.1 2.0 2.6 2.1 1.7 1.7 .1 .5 .7 .5 .4
.1 -.1 .0 .4 .0 .2 .0 -.1 -.6 -.6 .3 .1 .1 .0 -.4 -.8 -.6 -.4 .0 .7 .0 3.2 2.5 2.2 1.6 .9 1.3 .9 .4 .1 .3
.3 .8 .1 -.3 .2 .0 .1 .0 -.4 -.7 -.2 -.7 -.3 -.5 -.2 -.8 -.3 -.1 -.1 .7 .4 -.1 3.9 1.8 .3 .3 .2 .7 .6 .3 .0 -.7 .3 -.2 .3
.7 .1 .1 1.0 1.2 -.2 .3 -.3 -.7 -.4 -.9 .2 .2 -.6 .2 -.2 .1 .4 -.5 -.4 -.2 .9 .6 .4 .4 .3 .3 .3
.1 .7 -2.9

SATOBS : RMS O-B VECTOR DIFFERENCES (M/S) BETWEEN 701 AND 1000 HPA FIGURE 14
AUGUST 1996
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT

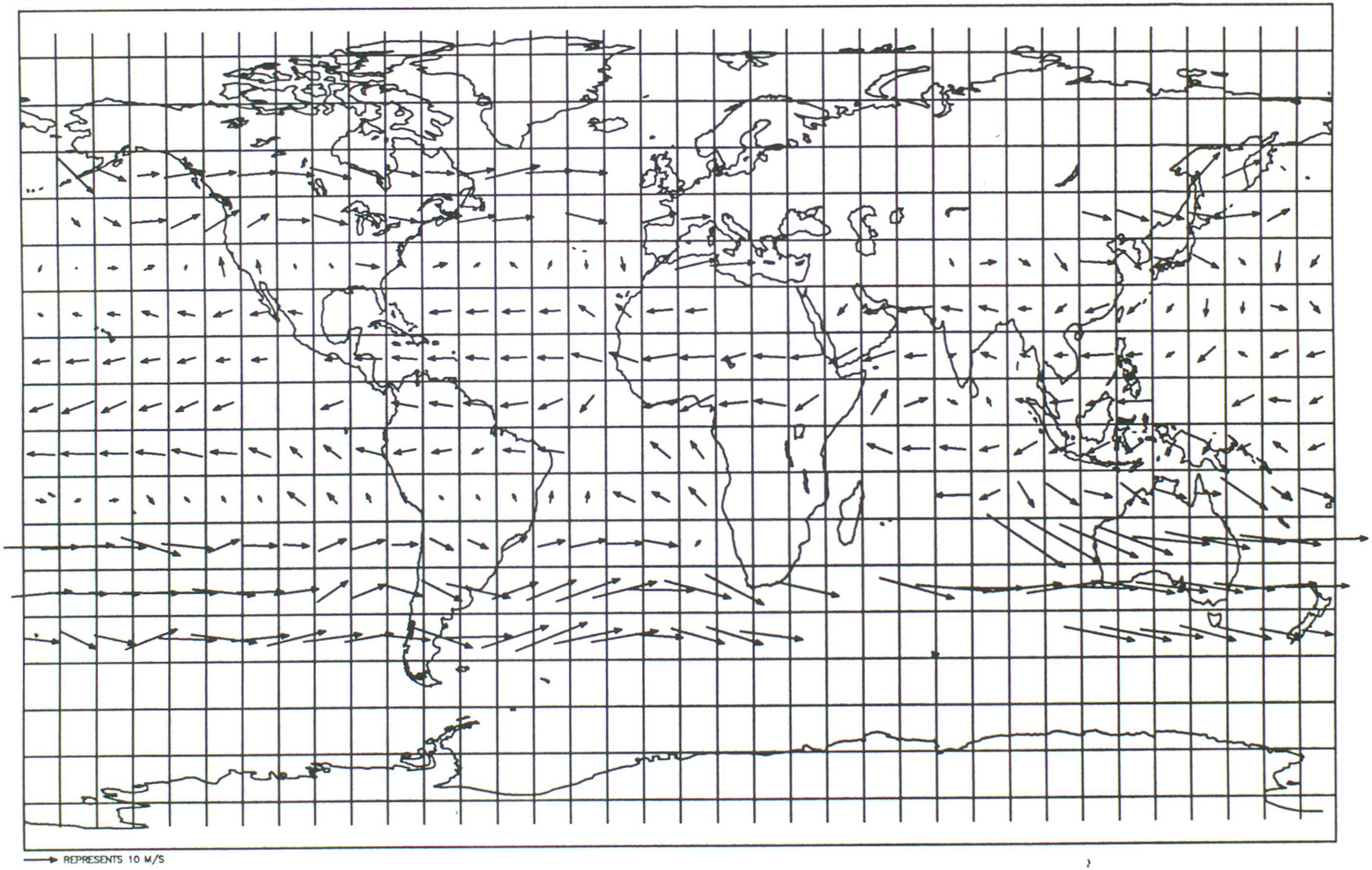

3 3 3
3 3 3 3 4 5 3 5 5 3 4 3 2 4 4 4 4 3
3 4 3 3 3 5 6 3 4 3 3 3 3 4 8 4 4 5 4 3
3 3 3 3 3 3 5 5 4 4 3 3 2 2 2 4 8 9 7 7 7 8 5 3 3 3 4 3 4
3 3 3 3 4 3 4 5 5 4 5 4 3 3 3 4 9 8 8 7 8 4 6 6 3 3 3 3 2 3
4 4 3 4 4 4 4 4 5 6 8 4 3 4 4 3 5 6 9 7 7 7 6 7 3 7 8 8 3 3 3 3 4
3 3 4 3 4 4 4 4 5 5 5 4 4 4 3 3 3 4 6 4 4 5 6 7 9 6 6 5 5 4 4 3 3 3
3 4 3 3 3 3 3 4 4 6 5 5 5 3 3 3 3 5 13 4 5 6 5 6 5 5 5 4 4 3 3 4
3 3 3 3 3 3 3 3 3 3 3 4 4 3 3 3 3 4 7 3 4 6 6 5 5 4 4 4 3 3 3
3 3 4 4 4 4 4 3 3 3 3 10 4 3 3 3 3 4 3 4 3 4 7 6 6 6 5 4 5 3 3 3 3 3 3 3
4 4 4 4 5 4 3 4 4 4 5 8 7 5 4 4 4 4 4 5 3 5 4 4 3 4 4 3
3 5 6

AVERAGE DAILY NUMBER OF SATOB OBSERVATIONS BETWEEN 401 AND 700 HPA FIGURE 15
AUGUST 1996


0 0 0 0 0 0 0 0 0 0 0 0
0 1 2 3 2 2 4 5 5 4 3 3 2 1 1 1 0 0 0 0 0 0 0
0 1 3 3 4 2 5 5 3 3 1 1 1 2 1 1 1 1 0 0 1 2 2 2 2 1 0
1 2 4 6 4 2 7 4 2 2 2 1 2 3 2 1 1 1 1 1 0 0 2 2 2 2 0 1 1 1 1 2
1 3 7 10 6 2 3 3 1 0 1 3 9 10 7 4 1 2 3 0 0 0 2 1 4 8 9 9 6 2 1 1 0 0 1 1
4 5 5 7 5 2 1 1 1 1 1 4 5 5 3 1 1 1 1 1 1 1 2 1 2 6 6 8 6 3 1 1 0 1 0 1
3 5 6 5 4 2 1 1 1 1 3 3 6 8 6 1 1 1 2 1 1 1 1 1 2 4 6 10 14 8 4 0 0 1 1 1
8 11 14 13 12 10 3 3 4 2 6 4 3 5 5 0 0 1 1 0 0 0 0 2 4 5 8 9 12 5 2 0 0 1
8 12 11 12 16 23 14 21 23 7 8 5 7 5 3 1 1 3 3 0 0 0 0 1 0 2 4 10 5 1 0 1 0 1 1 1
7 11 14 14 12 11 14 16 26 27 16 11 12 8 12 8 3 2 1 0 0 0 0 0 0 0 0 1 2 1 1 1 0 1 1 1
13 14 11 15 17 15 15 10 21 25 17 7 7 7 8 10 7 3 3 2 1 1 0 0 2 2 1 2 3 3 3 3 2 2 3 2
3 3 2 3 4 9 10 11 11 11 7 5 5 6 8 6 4 2 3 2 2 0 0 3 5 5 5 4 4 1
0 0 0 0 0 0 0 0 0 1 1

SATOB VECTOR MEAN WINDS BETWEEN 401–700 HPA
AUGUST 1996
ALL OBSERVATIONS
ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT

FIGURE 16


REPRESENTS 10 M/S

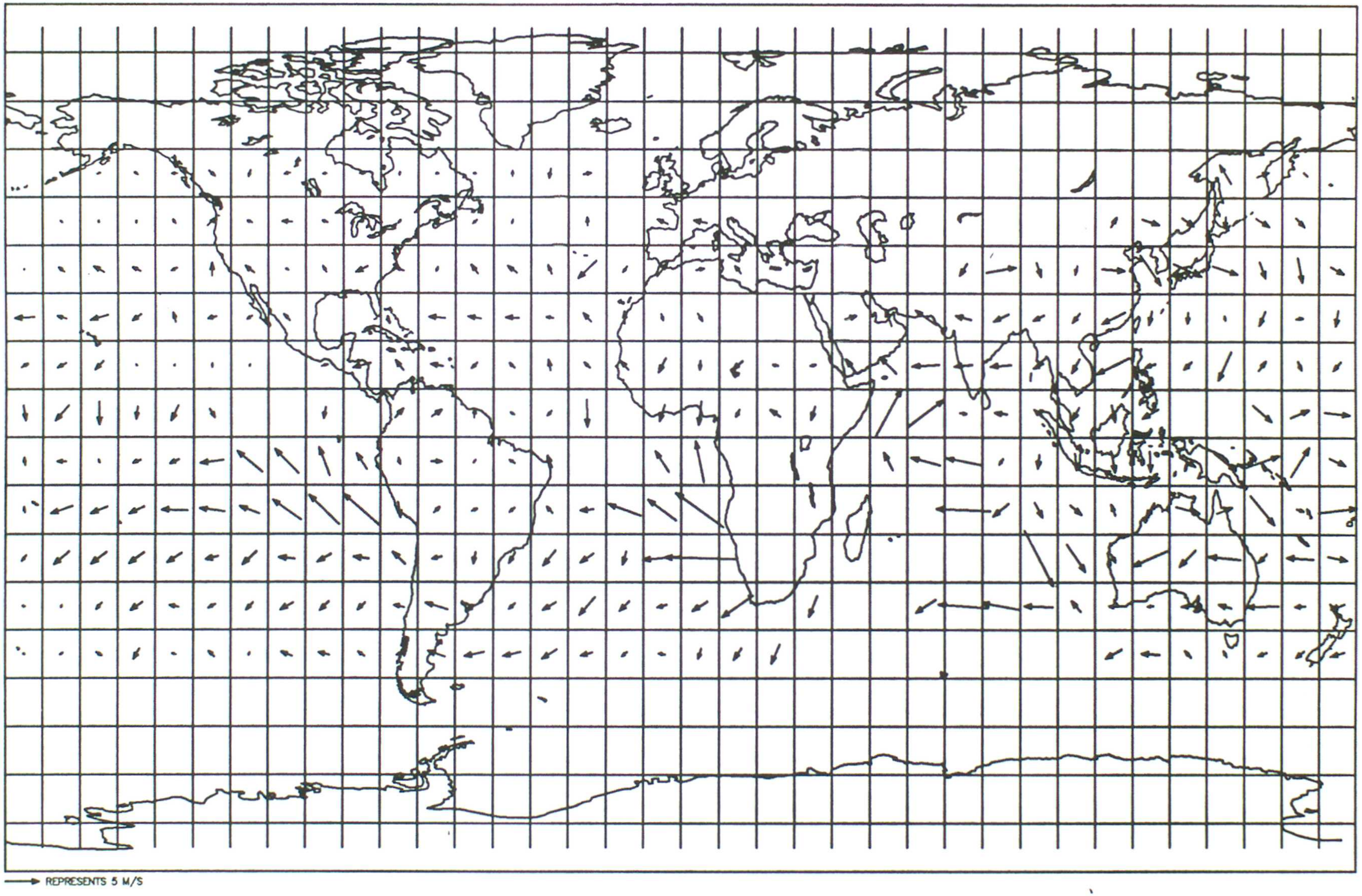
SATOB O–B VECTOR WIND DIFFERENCES BETWEEN 401–700 HPA

AUGUST 1996

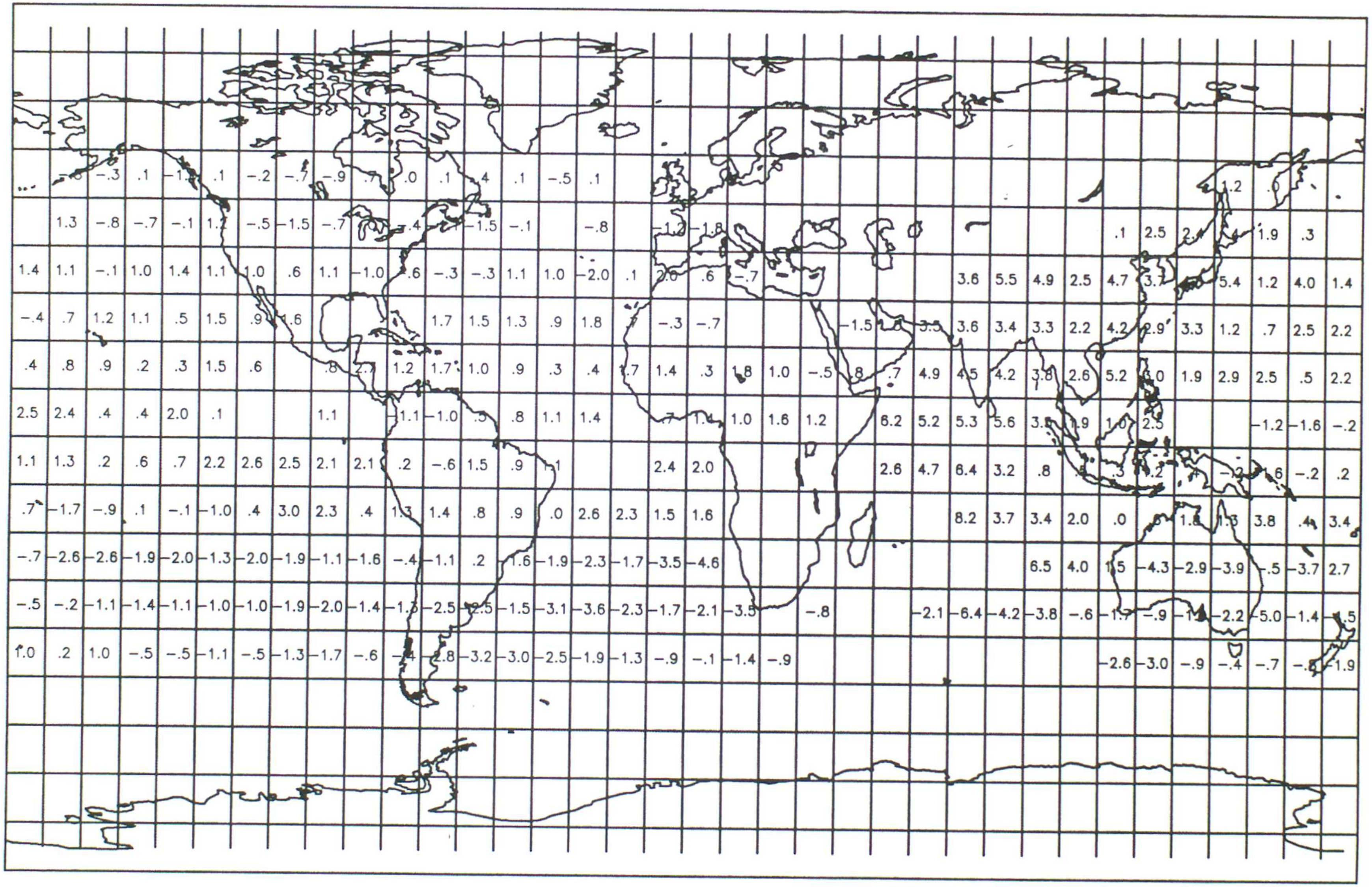
ALL OBSERVATIONS

ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT

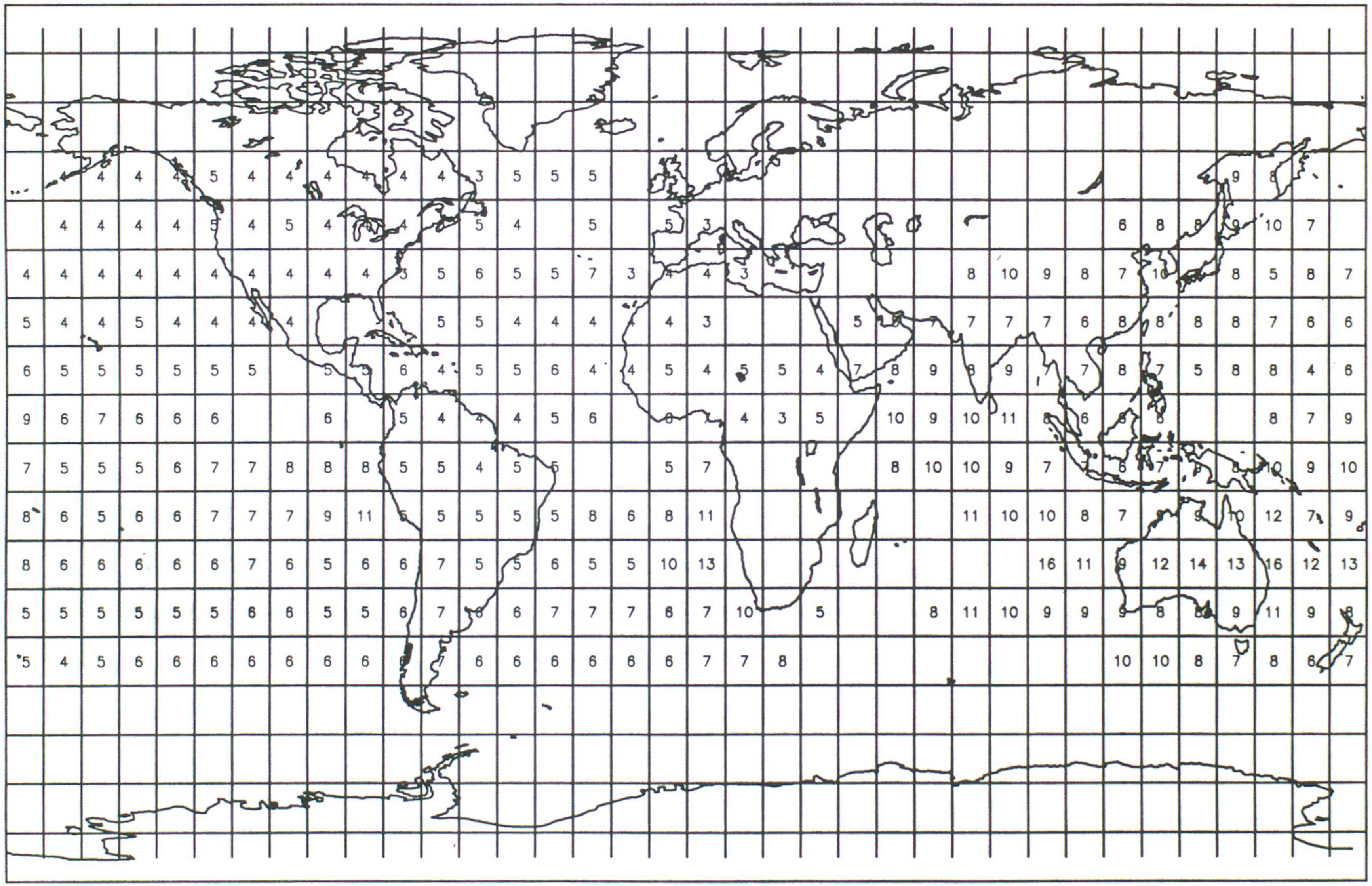
FIGURE 17



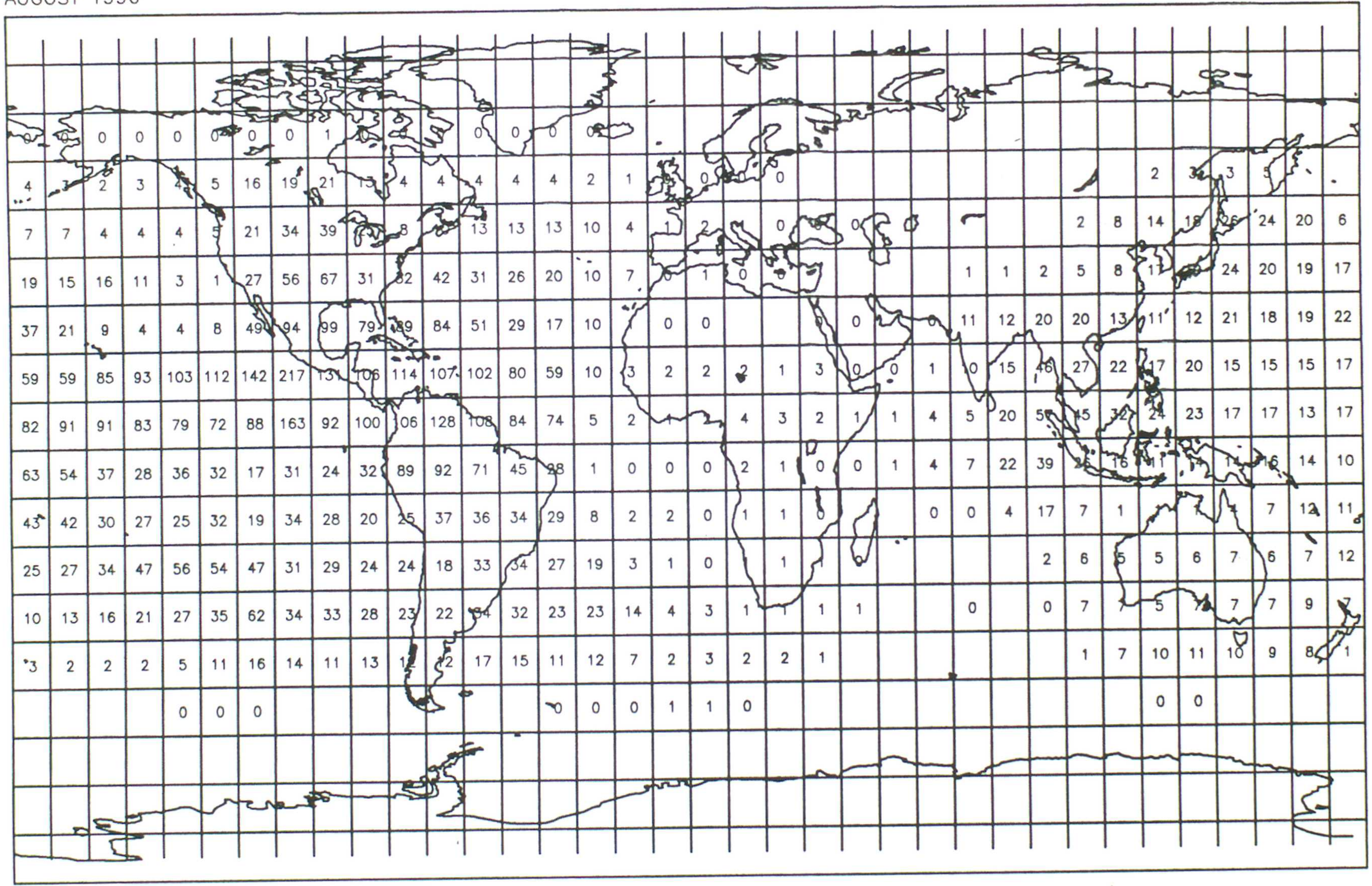
SATOBS : MEAN O–B SPEED DIFFERENCES (M/S) BETWEEN 401 AND 700 HPA FIGURE 18
AUGUST 1996
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT


-.3 .1 .1 -.2 -.7 -.9 .0 .1 .4 .1 -.5 .1 .2 .0
1.3 -.8 -.7 -.1 1.2 -.5 -1.5 -.7 -.4 -1.5 -.1 -.8 -1.2 -1.8 .1 2.5 2.4 1.9 .3
1.4 1.1 -.1 1.0 1.4 1.1 1.0 .6 1.1 -1.0 .6 -.3 -.3 1.1 1.0 -2.0 .1 2.0 .6 -.7 3.6 5.5 4.9 2.5 4.7 3.7 5.4 1.2 4.0 1.4
-.4 .7 1.2 1.1 .5 1.5 .9 1.6 1.7 1.5 1.3 .9 1.8 -.3 -.7 -1.5 3.5 3.6 3.4 3.3 2.2 4.2 2.9 3.3 1.2 .7 2.5 2.2
.4 .8 .9 .2 .3 1.5 .6 .8 2.1 1.2 1.7 1.0 .9 .3 .4 1.7 1.4 .3 1.8 1.0 -.5 .8 .7 4.9 4.5 4.2 3.8 2.6 5.2 3.0 1.9 2.9 2.5 .5 2.2
2.5 2.4 .4 .4 2.0 .1 1.1 -1.1 -1.0 .5 .8 1.1 1.4 .7 1.4 1.0 1.6 1.2 6.2 5.2 5.3 5.6 3.5 1.9 1.0 2.5 -1.2 -1.6 -.2
1.1 1.3 .2 .6 .7 2.2 2.6 2.5 2.1 2.1 .2 -.6 1.5 .9 .1 2.4 2.0 2.6 4.7 6.4 3.2 .8 .3 .2 -.2 .6 -.2 .2
.7 -1.7 -.9 .1 -.1 -1.0 .4 3.0 2.3 .4 1.3 1.4 .8 .9 .0 2.6 2.3 1.5 1.6 8.2 3.7 3.4 2.0 .0 1.8 1.3 3.8 .4 3.4
-.7 -2.6 -2.6 -1.9 -2.0 -1.3 -2.0 -1.9 -1.1 -1.6 -.4 -1.1 .2 1.6 -1.9 -2.3 -1.7 -3.5 -4.6 6.5 4.0 1.5 -4.3 -2.9 -3.9 -.5 -3.7 2.7
-.5 -.2 -1.1 -1.4 -1.1 -1.0 -1.0 -1.9 -2.0 -1.4 -1.3 -2.5 -2.5 -1.5 -3.1 -3.6 -2.3 -1.7 -2.1 -3.5 -.8 -2.1 -6.4 -4.2 -3.8 -.6 -1.7 -.9 -1.4 -2.2 -5.0 -1.4 -1.5
1.0 .2 1.0 -.5 -.5 -1.1 -.5 -1.3 -1.7 -.6 -.4 -2.8 -3.2 -3.0 -2.5 -1.9 -1.3 -.9 -.1 -1.4 -.9 -2.6 -3.0 -.9 -.4 -.7 -.8 -1.9

SATOBS : RMS O-B VECTOR DIFFERENCES (M/S) BETWEEN 401 AND 700 HPA FIGURE 19
AUGUST 1996
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT


4 4 4 5 4 4 4 4 4 4 3 5 5 5 9 8
4 4 4 4 5 4 5 4 4 4 5 4 5 5 3 6 8 8 9 10 7
4 4 4 4 4 4 4 4 4 4 3 5 6 5 5 7 3 4 4 3 8 10 9 8 7 10 8 5 8 7
5 4 4 5 4 4 4 4 5 5 4 4 4 4 4 3 5 6 7 7 7 7 6 8 8 8 8 7 6 6
6 5 5 5 5 5 5 5 5 6 4 5 5 6 4 4 5 4 5 5 4 7 8 9 8 9 7 7 8 7 5 8 8 4 6
9 6 7 6 6 6 6 5 4 4 4 5 6 6 7 4 3 5 10 9 10 11 8 6 8 6 8 7 9
7 5 5 5 6 7 7 8 8 8 5 5 4 5 5 5 7 8 10 10 9 7 7 6 7 9 8 10 9 10
8 6 5 6 6 7 7 7 9 11 5 5 5 5 5 8 6 8 11 11 10 10 8 7 9 9 10 12 7 9
8 6 6 6 6 6 7 6 5 6 6 7 5 5 6 5 5 10 13 16 11 9 12 14 13 16 12 13
5 5 5 5 5 5 6 6 5 5 6 7 8 6 7 7 7 6 7 10 5 8 11 10 9 9 9 8 8 9 11 9 8
5 4 5 6 6 6 6 6 6 6 6 7 6 6 6 6 6 6 7 7 8 10 10 8 7 8 6 7

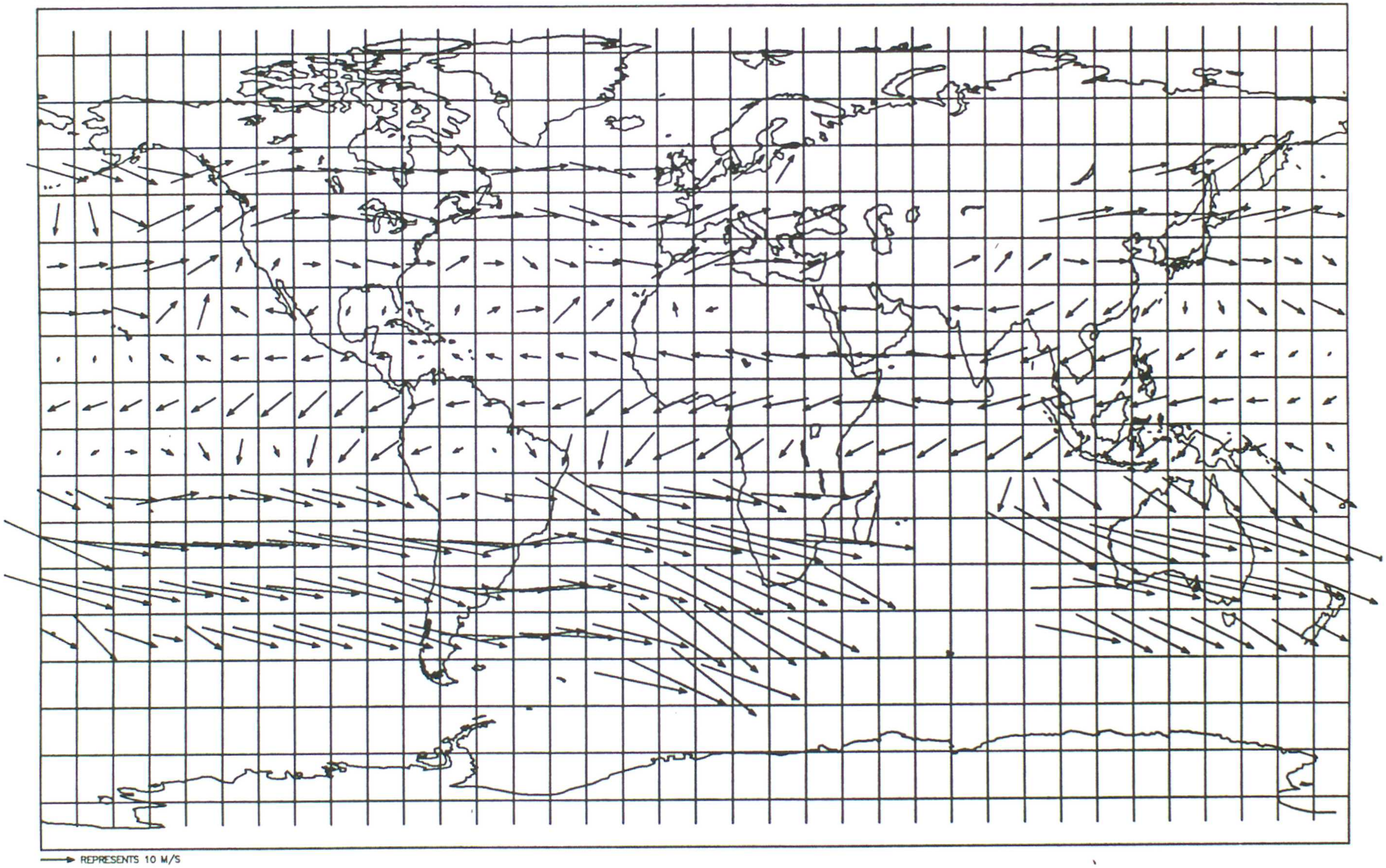
AVERAGE DAILY NUMBER OF SATOB OBSERVATIONS BETWEEN 101 AND 400 HPA FIGURE 20
AUGUST 1996



0	0	0	0	0	0	0	0	1	0	0		0	0	0	0																				
4	3	2	3	4	5	16	19	21	13	4	4	4	4	4	2	1	0	0		0										2	3	3	5		
7	7	4	4	4	5	21	34	39	[illegible]	8		13	13	13	10	4	1	2		0	0	0						2	8	14	18	26	24	20	6
19	15	16	11	3	1	27	56	67	31	32	42	31	26	20	10	7	0	1	0	0					1	1	2	5	8	17	[illegible]	24	20	19	17
37	21	9	4	4	8	49	94	99	79	89	84	51	29	17	10		0	0			0	0		0	11	12	20	20	13	11	12	21	18	19	22
59	59	85	93	103	112	142	217	131	106	114	107	102	80	59	10	3	2	2	2	1	3	0	0	1	10	15	46	27	22	17	20	15	15	15	17
82	91	91	83	79	72	88	163	92	100	106	128	108	84	74	5	2	1	2	4	3	2	1	1	4	5	20	[illegible]	45	32	24	23	17	17	13	17
63	54	37	28	36	32	17	31	24	32	89	92	71	45	28	1	0	0	0	2	1	0	0	1	4	7	22	39	25	16	11	14	14	16	14	10
43	42	30	27	25	32	19	34	28	20	25	37	36	34	29	8	2	2	0	1	1	0			0	0	4	17	7	1	[illegible]	[illegible]	[illegible]	7	12	11
25	27	34	47	56	54	47	31	29	24	24	18	33	34	27	19	3	1	0		1	1						2	6	5	5	6	7	6	7	12
10	13	16	21	27	35	62	34	33	28	23	22	34	32	23	23	14	4	3	1	1	1	1			0		0	7	7	5	7	7	7	9	7
3	2	2	2	5	11	16	14	11	13	12	12	17	15	11	12	7	2	3	2	2	1							1	7	10	11	10	9	8	1
				0	0	0								0	0	0	1	1	0											0	0				

SATOB VECTOR MEAN WINDS BETWEEN 101–400 HPA
AUGUST 1996
ALL OBSERVATIONS
ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT

FIGURE 21


REPRESENTS 10 M/S

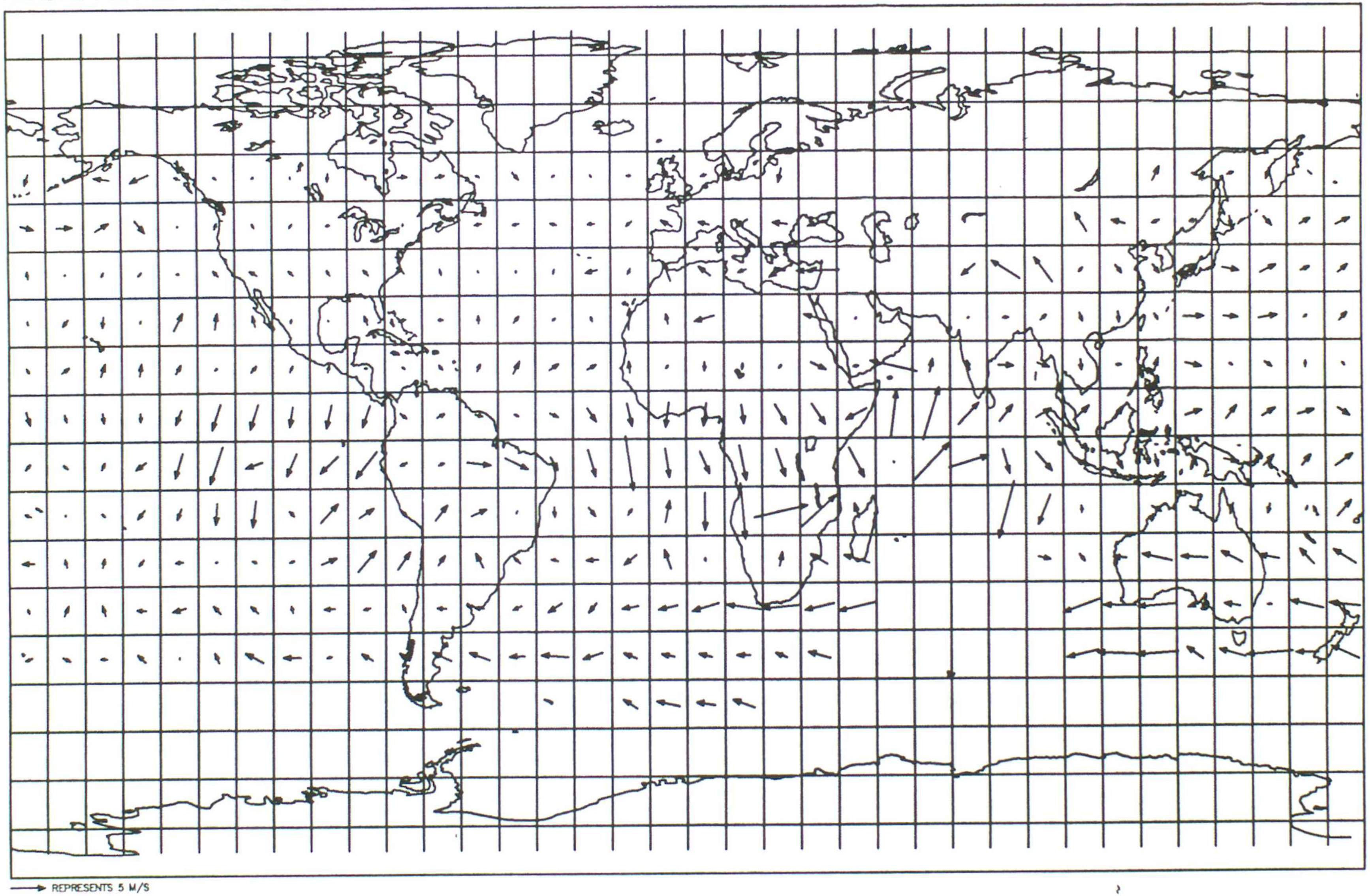
SATOB O-B VECTOR WIND DIFFERENCES BETWEEN 101-400 HPA

FIGURE 22

AUGUST 1996

ALL OBSERVATIONS

ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT

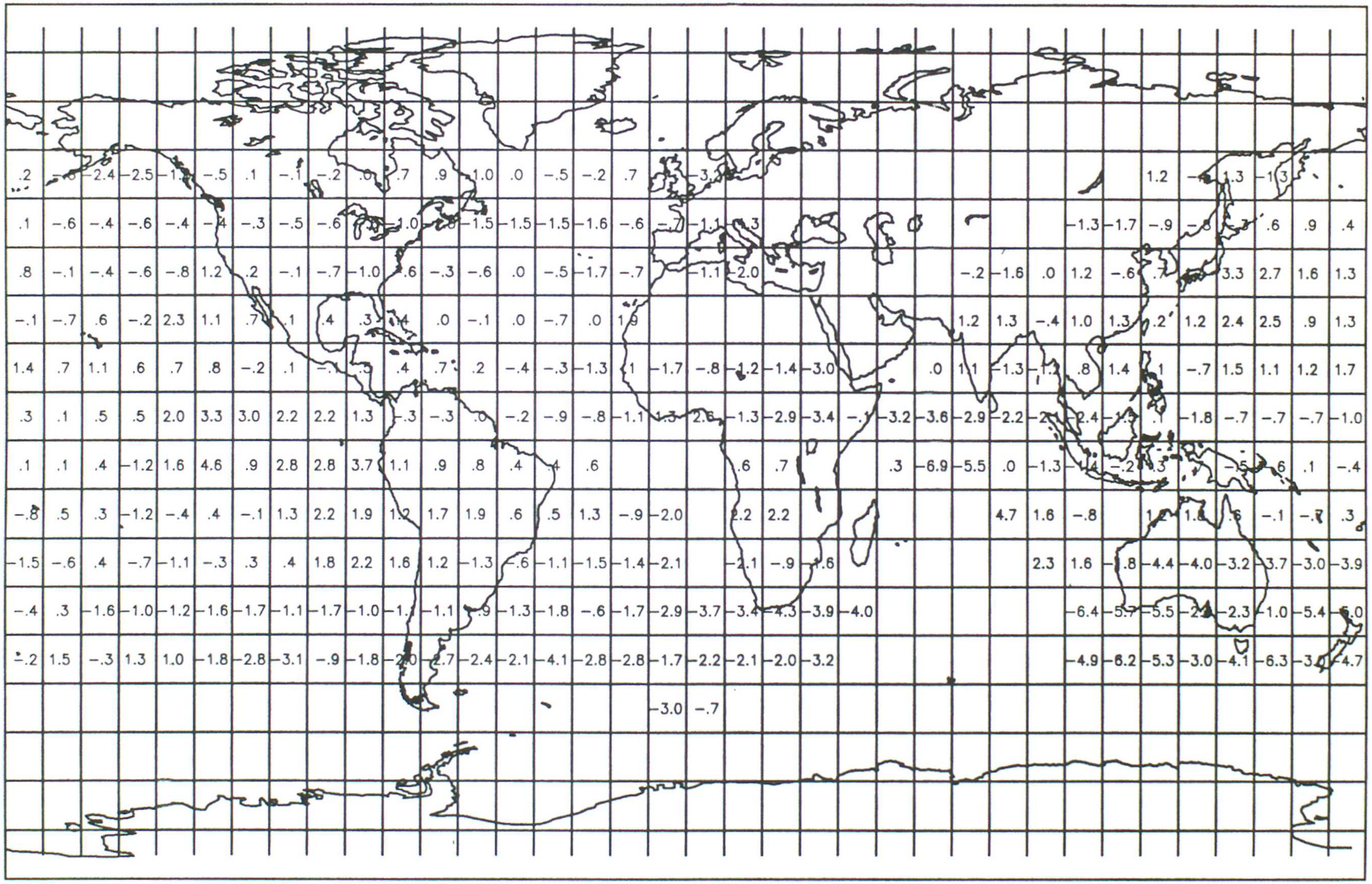


SATOBS : MEAN O–B SPEED DIFFERENCES (M/S) BETWEEN 101 AND 400 HPA FIGURE 23

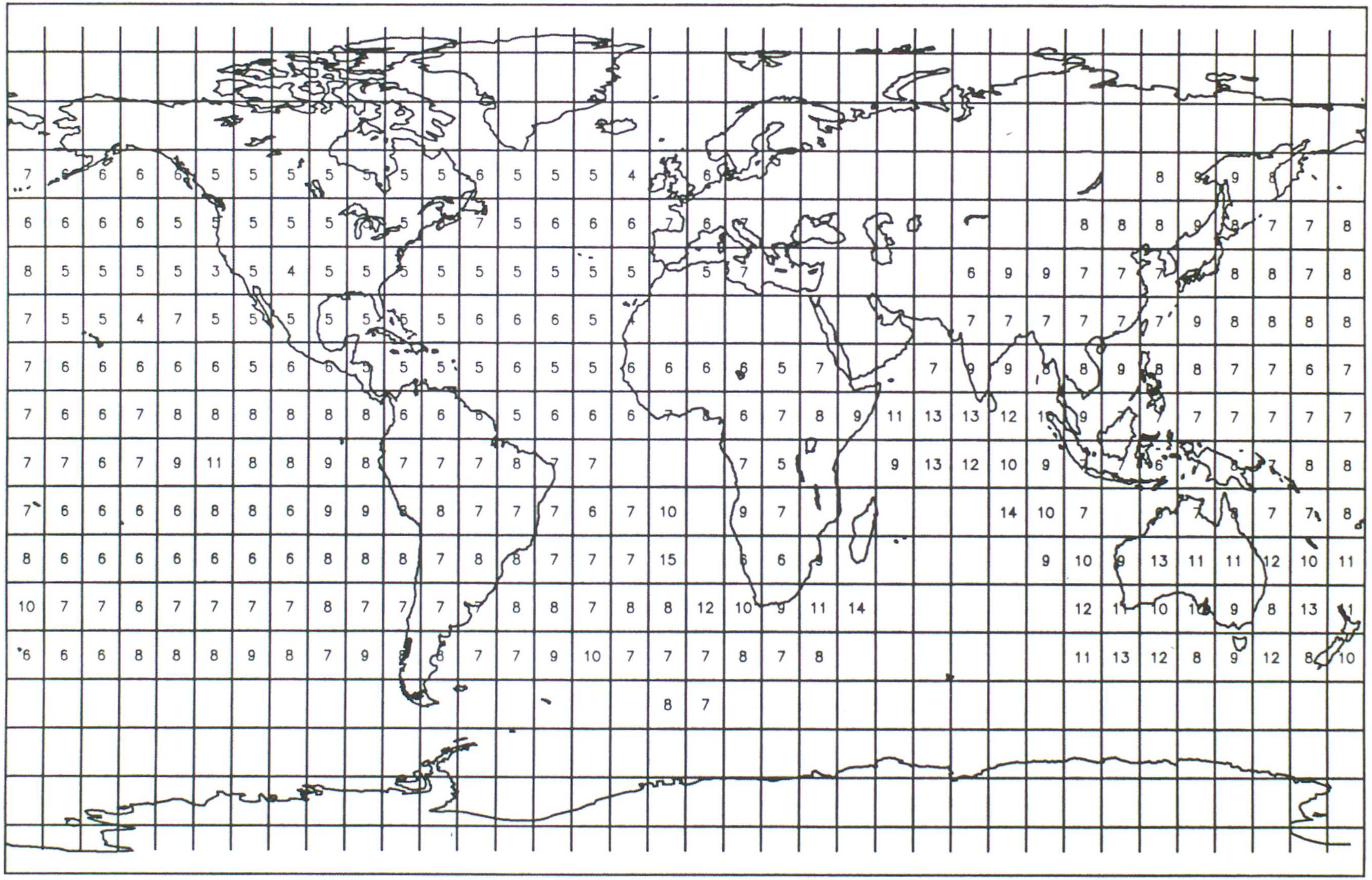
AUGUST 1996

USING ALL OBSERVATIONS

VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT


.2 -2.4 -2.5 -.5 .1 -.1 -.2 .7 .9 1.0 .0 -.5 -.2 .7 1.2 1.3 -1.3
.1 -.6 -.4 -.6 -.4 -.3 -.5 -.6 -1.0 -1.5 -1.5 -1.5 -1.6 -.6 -.7 -1.1 -1.3 -1.7 -.9 .6 .9 .4
.8 -.1 -.4 -.6 -.8 1.2 .2 -.1 -.7 -1.0 .6 -.3 -.6 .0 -.5 -1.7 -.7 -1.1 -2.0 -.2 -1.6 .0 1.2 -.6 .7 3.3 2.7 1.6 1.3
-.1 -.7 .6 -.2 2.3 1.1 .7 .1 .4 .3 .4 .0 -.1 .0 -.7 .0 1.9 1.2 1.3 -.4 1.0 1.3 .2 1.2 2.4 2.5 .9 1.3
1.4 .7 1.1 .6 .7 .8 -.2 .1 .4 .7 .2 -.4 -.3 -1.3 .1 -1.7 -.8 -1.2 -1.4 -3.0 .0 1.1 -1.3 -1.2 .8 1.4 .1 -.7 1.5 1.1 1.2 1.7
.3 .1 .5 .5 2.0 3.3 3.0 2.2 2.2 1.3 -.3 -.3 .0 -.2 -.9 -.8 -1.1 -1.3 -2.6 -1.3 -2.9 -3.4 -3.2 -3.6 -2.9 -2.2 -2.4 .1 -1.8 -.7 -.7 -.7 -1.0
.1 .1 .4 -1.2 1.6 4.6 .9 2.8 2.8 3.7 1.1 .9 .8 .4 .4 .6 .6 .7 .3 -6.9 -5.5 .0 -1.3 -.2 .3 .6 .1 -.4
-.8 .5 .3 -1.2 -.4 .4 -.1 1.3 2.2 1.9 1.2 1.7 1.9 .6 .5 1.3 -.9 -2.0 2.2 2.2 4.7 1.6 -.8 1.2 1.8 .6 -.1 -.7 .3
-1.5 -.6 .4 -.7 -1.1 -.3 .3 .4 1.8 2.2 1.6 1.2 -1.3 -.6 -1.1 -1.5 -1.4 -2.1 -2.1 -.9 -1.6 2.3 1.6 -1.8 -4.4 -4.0 -3.2 -3.7 -3.0 -3.9
-.4 .3 -1.6 -1.0 -1.2 -1.6 -1.7 -1.1 -1.7 -1.0 -1.1 -.9 -1.3 -1.8 -.6 -1.7 -2.9 -3.7 -3.4 -4.3 -3.9 -4.0 -6.4 -5.7 -5.5 -2.3 -1.0 -5.4 -5.0
-.2 1.5 -.3 1.3 1.0 -1.8 -2.8 -3.1 -.9 -1.8 -2.0 -2.7 -2.4 -2.1 -4.1 -2.8 -2.8 -1.7 -2.2 -2.1 -2.0 -3.2 -4.9 -6.2 -5.3 -3.0 -4.1 -6.3 -4.7
-3.0 -.7

SATOBS : RMS O–B VECTOR DIFFERENCES (M/S) BETWEEN 101 AND 400 HPA FIGURE 24
AUGUST 1996
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT


7 6 6 6 6 5 5 5 5 5 5 5 6 5 5 5 4 6 8 9 9 8
6 6 6 6 5 5 5 5 5 5 5 5 7 5 6 6 6 7 6 7 8 8 8 9 8 7 7 8
8 5 5 5 5 3 5 4 5 5 5 5 5 5 5 5 5 5 7 6 9 9 7 7 7 8 8 7 8
7 5 5 4 7 5 5 5 5 5 5 5 6 6 6 5 4 7 7 7 7 7 7 9 8 8 8 8
7 6 6 6 6 6 5 6 6 5 5 5 5 6 5 5 6 6 6 6 5 7 7 9 9 8 8 9 8 8 7 7 6 7
7 6 6 7 8 8 8 8 8 8 6 6 6 5 6 6 6 7 8 6 7 8 9 11 13 13 12 10 9 7 7 7 7 7 7
7 7 6 7 9 11 8 8 9 8 7 7 7 8 7 7 7 5 9 13 12 10 9 7 6 8 7 8 8
7 6 6 6 6 8 8 6 9 9 8 8 7 7 7 6 7 10 9 7 14 10 7 8 7 8 7 7 8
8 6 6 6 6 6 6 6 8 8 8 7 8 8 7 7 7 15 6 6 9 9 10 9 13 11 11 12 10 11
10 7 7 6 7 7 7 7 8 7 7 7 7 8 8 7 8 8 12 10 9 11 14 12 11 10 10 9 8 13 11
6 6 6 8 8 8 9 8 7 9 8 8 7 7 9 10 7 7 7 8 7 8 11 13 12 8 9 12 8 10
8 7

MONITORING OF SATELLITE TEMPERATURES

MONITORING CENTRE: BRACKNELL

MONTH: August, 1996

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from NOAA-12, NOAA-14 500 km.

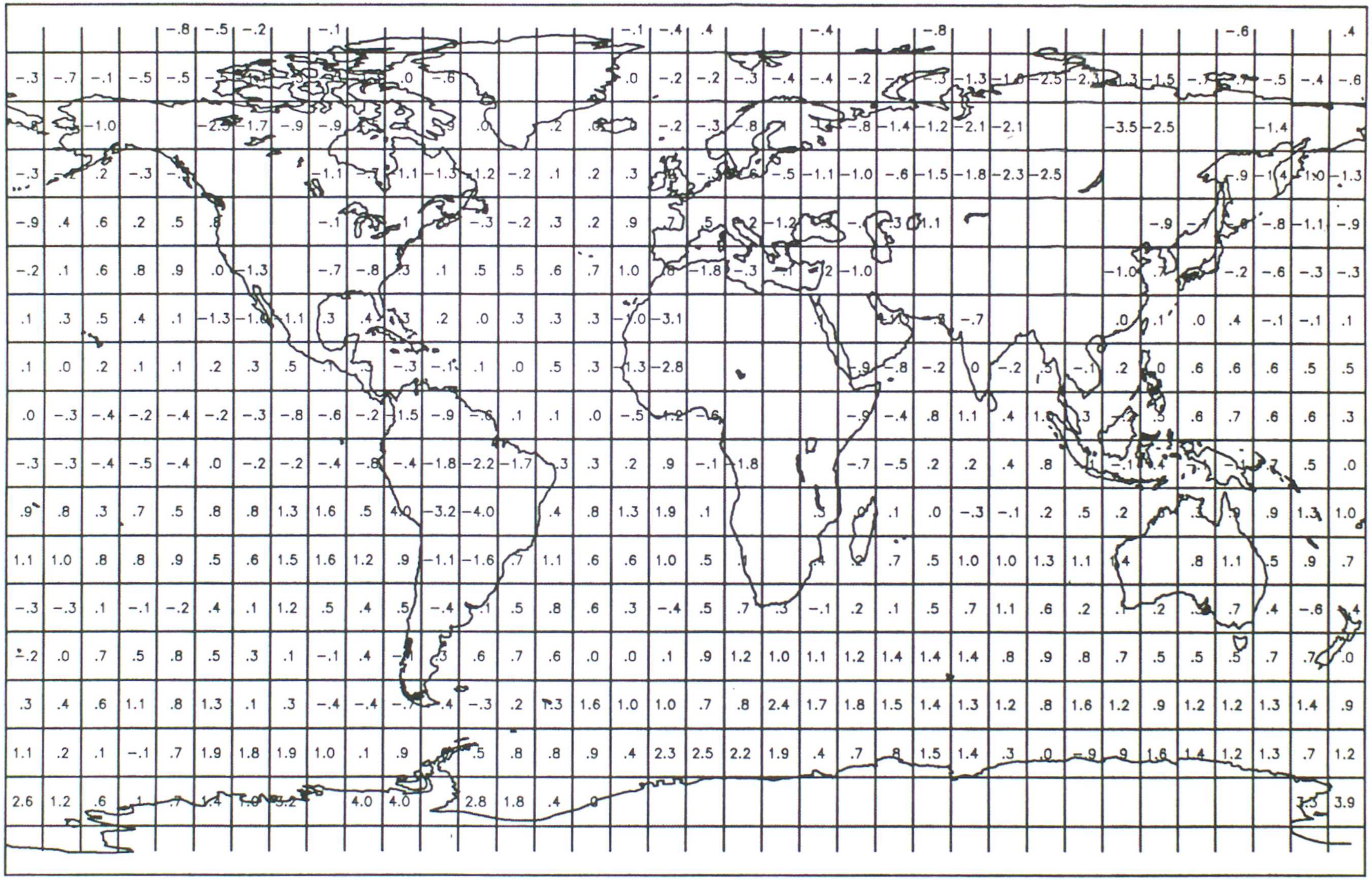
Standard of comparison :Background field from Bracknell global model.

Selection Criteria :All SATEM soundings where number of observations > 30.

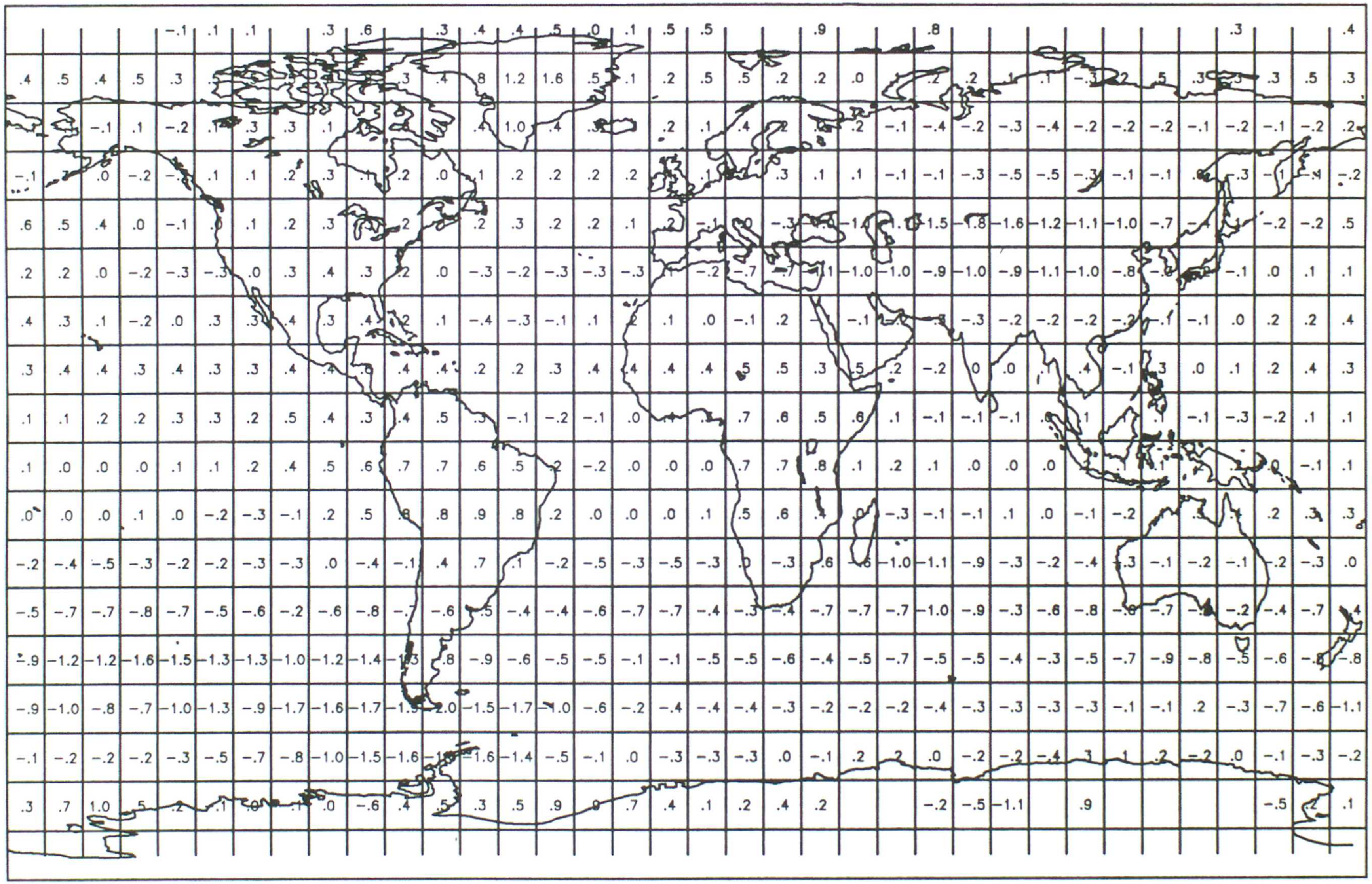
Data Extracted :Layer: 850 - 1000 hPa
100 - 300 hPa
30 - 50 hPa

:Mean observation minus background temperature differences

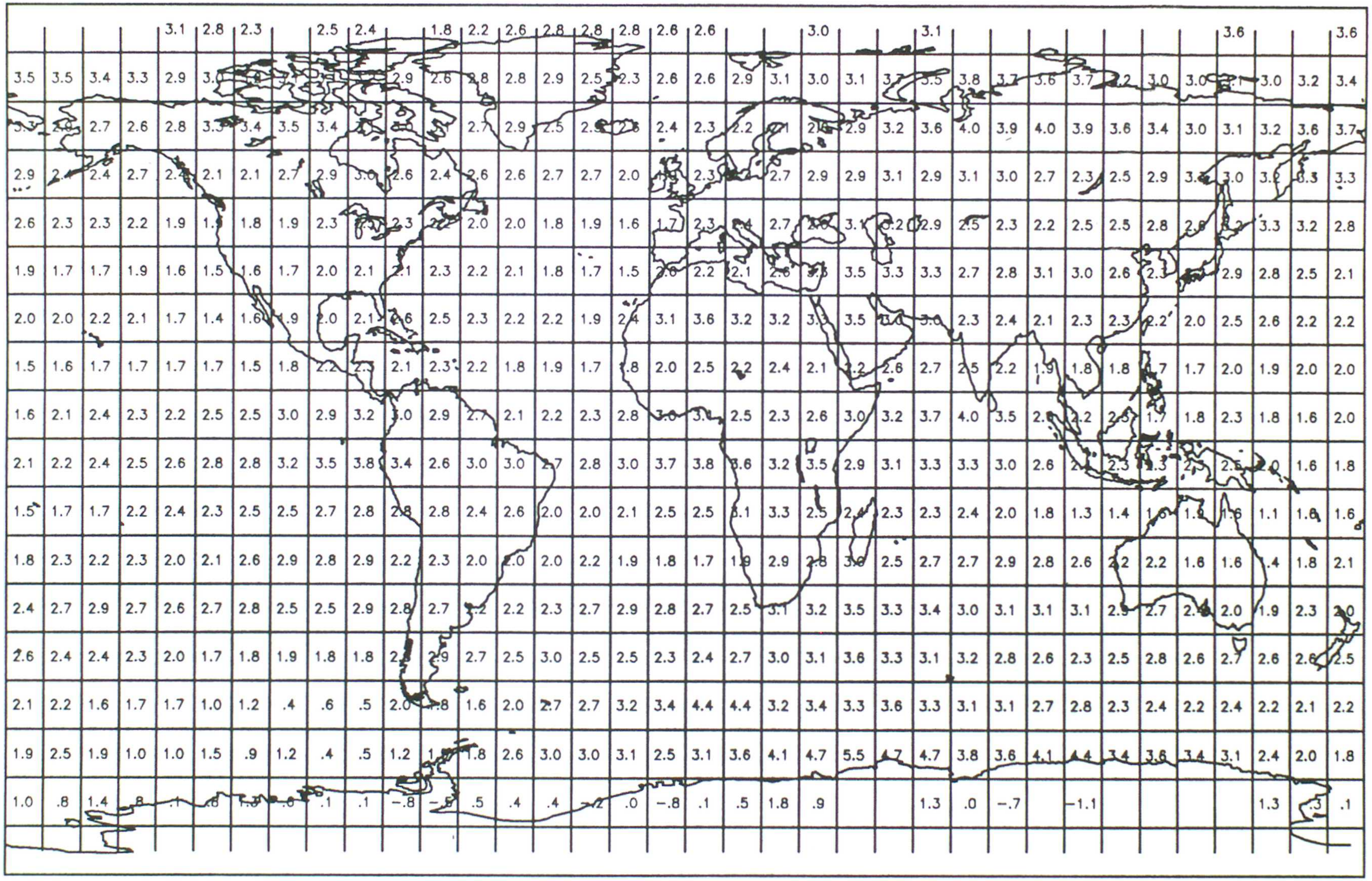
500 KM SATEMS : MEAN O−B TEMPERATURE DIFFERENCES (DEG C) : 850 TO 1000 HPA
AUGUST 1996
FIGURE 25
NOAA−12, USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT


−.8 −.5 −.2 −.1 −.1 −.4 .4 −.4 −.8 −.6 .4
−.3 −.7 −.1 −.5 −.5 .0 −.6 .0 −.2 −.2 −.3 −.4 −.4 −.2 −.3 −1.3 −2.5 −1.5 −.5 −.4 −.6
−1.0 −2.5 −1.7 −.9 −.9 .2 .6 −.2 −.3 .8 −.8 −1.4 −1.2 −2.1 −2.1 −3.5 −2.5 −1.4
−.3 .2 −.3 −1.1 1.1 −1.3 1.2 −.2 .1 .2 .3 −.5 −1.1 −1.0 −.6 −1.5 −1.8 −2.3 −2.5 −.9 −1.0 −1.3
−.9 .4 .6 .2 .5 −.1 −.3 −.2 .3 .2 .9 .7 .5 .2 −1.2 .3 1.1 −.9 −.8 −1.1 −.9
−.2 .1 .6 .8 .9 .0 −1.3 −.7 −.8 .3 .1 .5 .5 .6 .7 1.0 −1.8 −.3 .2 −1.0 −1.0 −.2 −.6 −.3 −.3
.1 .3 .5 .4 .1 −1.3 −1.6 1.1 .3 .4 .3 .2 .0 .3 .3 .3 −1.0 −3.1 −.7 .0 .1 .0 .4 −.1 −.1 .1
.1 .0 .2 .1 .1 .2 .3 .5 −.3 .1 .0 .5 .3 −1.3 −2.8 −.9 −.8 −.2 .0 −.2 .2 .0 .6 .6 .6 .5 .5
.0 −.3 −.4 −.2 −.4 −.2 −.3 −.8 −.6 −.2 1.5 −.9 .1 .1 .0 −.5 −.4 .8 1.1 .4 .3 .6 .7 .6 .6 .3
−.3 −.3 −.4 −.5 −.4 .0 −.2 −.2 −.4 −.4 −1.8 −2.2 −1.7 .3 .3 .2 .9 −.1 −1.8 −.7 −.5 .2 .2 .4 .8 .5 .0
.9 .8 .3 .7 .5 .8 .8 1.3 1.6 .5 4.0 −3.2 −4.0 .4 .8 1.3 1.9 .1 .1 .0 −.3 −.1 .2 .5 .2 .9 1.3 1.0
1.1 1.0 .8 .8 .9 .5 .6 1.5 1.6 1.2 .9 −1.1 −1.6 .7 1.1 .6 .6 1.0 .5 .7 .5 1.0 1.0 1.3 1.1 .4 .8 1.1 .5 .9 .7
−.3 −.3 .1 −.1 −.2 .4 .1 1.2 .5 .4 .5 −.4 .5 .8 .6 .3 −.4 .5 .7 −.1 .2 .1 .5 .7 1.1 .6 .2 .2 .7 .4 −.6 .4
.2 .0 .7 .5 .8 .5 .3 .1 −.1 .4 .6 .7 .6 .0 .0 .1 .9 1.2 1.0 1.1 1.2 1.4 1.4 1.4 .8 .9 .8 .7 .5 .5 .5 .7 .7 .0
.3 .4 .6 1.1 .8 1.3 .1 .3 −.4 −.4 .4 −.3 .2 .3 1.6 1.0 1.0 .7 .8 2.4 1.7 1.8 1.5 1.4 1.3 1.2 .8 1.6 1.2 .9 1.2 1.2 1.3 1.4 .9
1.1 .2 .1 −.1 .7 1.9 1.8 1.9 1.0 .1 .9 .5 .8 .8 .9 .4 2.3 2.5 2.2 1.9 .4 .7 .8 1.5 1.4 .3 .0 −.9 .9 1.6 1.4 1.2 1.3 .7 1.2
2.6 1.2 .6 .1 .7 1.4 1.6 3.2 4.0 4.0 2.8 1.8 .4 3.5 3.9

500 KM SATEMS : MEAN O–B TEMPERATURE DIFFERENCES (DEG C) : 100 TO 300 HPA
AUGUST 1996
FIGURE 26
NOAA–12, USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT

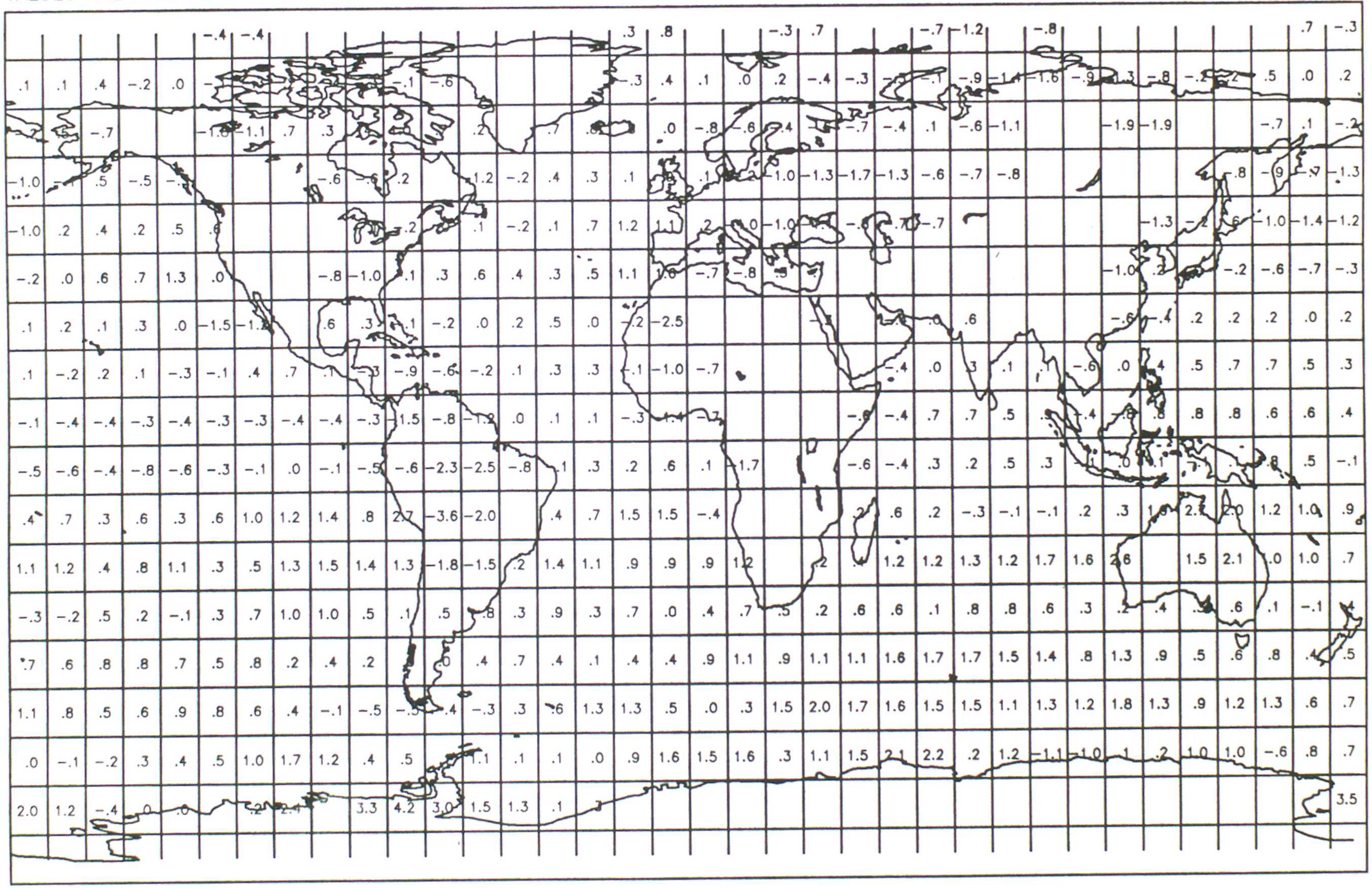


500 KM SATEMS : MEAN O–B TEMPERATURE DIFFERENCES (DEG C) : 30 TO 50 HPA
AUGUST 1996
FIGURE 27
NOAA–12, USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT


3.1 2.8 2.3 2.5 2.4 1.8 2.2 2.6 2.8 2.8 2.8 2.6 2.6 3.0 3.1 3.6 3.6
3.5 3.5 3.4 3.3 2.9 2.9 2.6 2.8 2.8 2.9 2.5 2.3 2.6 2.6 2.9 3.1 3.0 3.1 3.5 3.8 3.7 3.6 3.7 3.2 3.0 3.0 3.0 3.2 3.4
2.7 2.6 2.8 3.4 3.5 3.4 2.7 2.9 2.5 2.4 2.3 2.2 2.9 3.2 3.6 4.0 3.9 4.0 3.9 3.6 3.4 3.0 3.1 3.2 3.6 3.7
2.9 2.4 2.7 2.1 2.1 2.7 2.9 2.6 2.4 2.6 2.6 2.7 2.7 2.0 2.3 2.7 2.9 2.9 3.1 2.9 3.1 3.0 2.7 2.3 2.5 2.9 3.0 3.3 3.3
2.6 2.3 2.3 2.2 1.9 1.8 1.9 2.3 2.3 2.0 2.0 1.8 1.9 1.6 1.7 2.3 2.7 2.9 2.5 2.3 2.2 2.5 2.5 2.8 3.3 3.2 2.8
1.9 1.7 1.7 1.9 1.6 1.5 1.6 1.7 2.0 2.1 2.3 2.2 2.1 1.8 1.7 1.5 2.2 2.1 3.5 3.3 3.3 2.7 2.8 3.1 3.0 2.6 2.9 2.8 2.5 2.1
2.0 2.0 2.2 2.1 1.7 1.4 1.6 1.9 2.0 2.1 2.6 2.5 2.3 2.2 2.2 1.9 2.4 3.1 3.6 3.2 3.2 3.5 2.3 2.4 2.1 2.3 2.3 2.2 2.0 2.5 2.6 2.2 2.2
1.5 1.6 1.7 1.7 1.7 1.7 1.5 1.8 2.1 2.3 2.2 1.8 1.9 1.7 2.0 2.5 2.2 2.4 2.1 2.6 2.7 2.5 2.2 1.9 1.8 1.8 1.7 1.7 2.0 1.9 2.0 2.0
1.6 2.1 2.4 2.3 2.2 2.5 2.5 3.0 2.9 3.2 3.0 2.9 2.7 2.1 2.2 2.3 2.8 2.5 2.3 2.6 3.0 3.2 3.7 4.0 3.5 2.2 1.7 1.8 2.3 1.8 1.6 2.0
2.1 2.2 2.4 2.5 2.6 2.8 2.8 3.2 3.5 3.8 3.4 2.6 3.0 3.0 2.7 2.8 3.0 3.7 3.8 3.6 3.2 3.5 2.9 3.1 3.3 3.3 3.0 2.6 2.3 1.6 1.8
1.5 1.7 1.7 2.2 2.4 2.3 2.5 2.5 2.7 2.8 2.8 2.4 2.6 2.0 2.0 2.1 2.5 2.5 3.3 2.5 2.3 2.3 2.4 2.0 1.8 1.3 1.4 1.1 1.6
1.8 2.3 2.2 2.3 2.0 2.1 2.6 2.9 2.8 2.9 2.2 2.3 2.0 2.0 2.0 2.2 1.9 1.8 1.7 1.9 2.9 2.8 2.5 2.7 2.7 2.9 2.8 2.6 2.2 2.2 1.6 1.6 1.8 2.1
2.4 2.7 2.9 2.7 2.6 2.7 2.8 2.5 2.5 2.9 2.8 2.7 2.2 2.2 2.3 2.7 2.9 2.8 2.7 2.5 3.1 3.2 3.5 3.3 3.4 3.0 3.1 3.1 3.1 2.7 2.0 1.9 2.3
2.6 2.4 2.4 2.3 2.0 1.7 1.8 1.9 1.8 1.8 2.9 2.7 2.5 3.0 2.5 2.5 2.3 2.4 2.7 3.0 3.1 3.6 3.3 3.1 3.2 2.8 2.6 2.3 2.5 2.8 2.6 2.7 2.6 2.6 2.5
2.1 2.2 1.6 1.7 1.7 1.0 1.2 .4 .6 .5 2.0 1.6 2.0 2.7 2.7 3.2 3.4 4.4 4.4 3.2 3.4 3.3 3.6 3.3 3.1 3.1 2.7 2.8 2.3 2.4 2.2 2.4 2.2 2.1 2.2
1.9 2.5 1.9 1.0 1.0 1.5 .9 1.2 .4 .5 1.2 1.8 2.6 3.0 3.0 3.1 2.5 3.1 3.6 4.1 4.7 5.5 4.7 4.7 3.8 3.6 4.1 4.4 3.4 3.6 3.4 3.1 2.4 2.0 1.8
1.0 .8 1.4 .1 .1 −.8 .5 .4 .4 .0 −.8 .1 .5 1.8 .9 1.3 .0 −.7 −1.1 1.3 .1

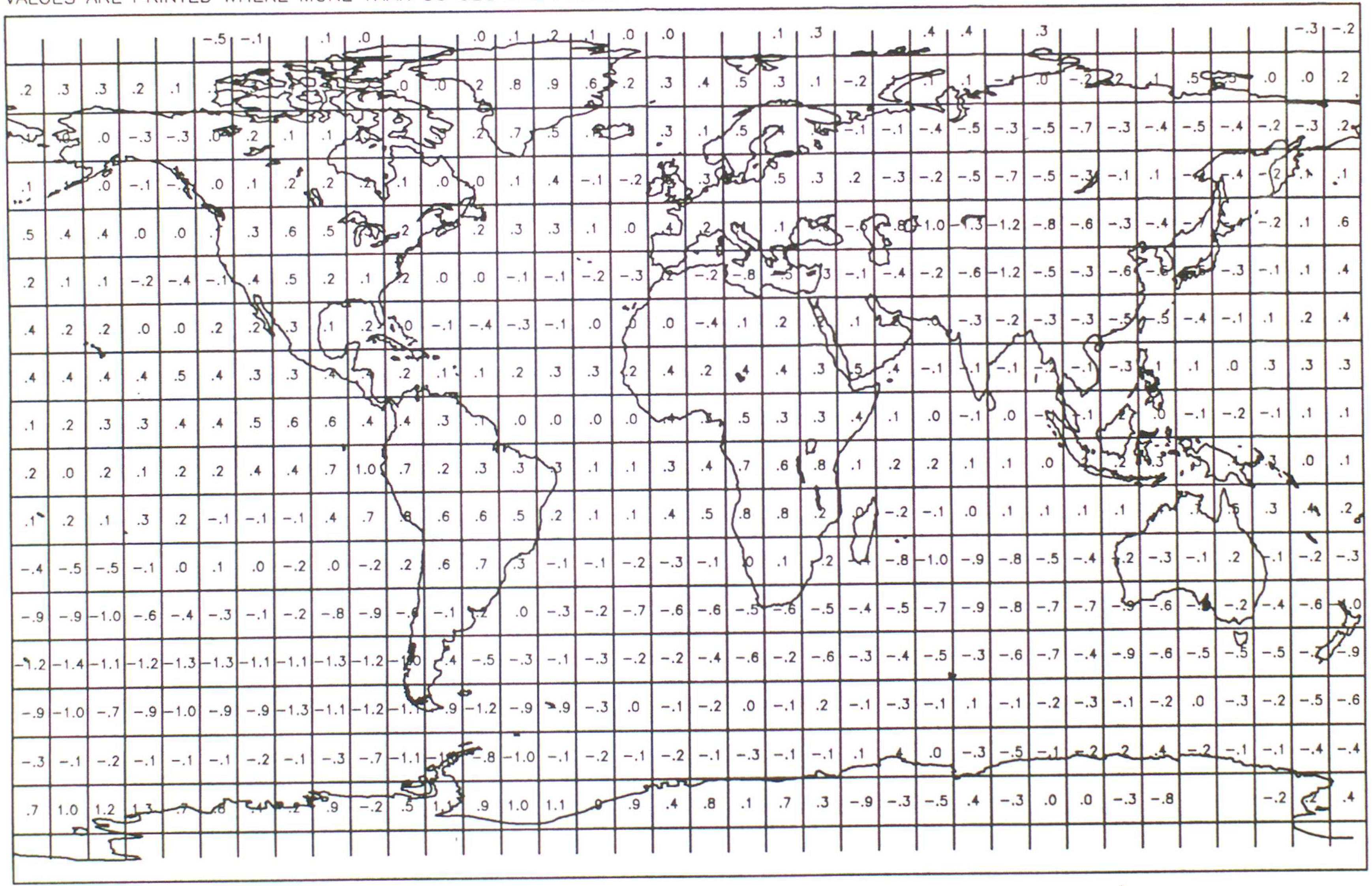
500 KM SATEMS : MEAN O−B TEMPERATURE DIFFERENCES (DEG C) : 850 TO 1000 HPA
AUGUST 1996
NOAA−14, USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT

FIGURE 28



500 KM SATEMS : MEAN O–B TEMPERATURE DIFFERENCES (DEG C) : 100 TO 300 HPA
AUGUST 1996
NOAA–14, USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT

FIGURE 29



					-.5	-.1		.1	.0			.0	.1	.2	.1	.0	.0			.1	.3			.4	.4		.3							-.3	-.2
.2	.3	.3	.2	.1	[illegible]					.0	.0	2	.8	.9	.6	.2	.3	.4	.5	.3	.1	-.2		.1	.1	[illegible]	.0	-.2	2	.1	.5	5	.0	.0	.2
[illegible]	[illegible]	.0	-.3	-.3	.0	.2	.1	.1			[illegible]	.2	.7	.5	[illegible]		.3	.1	.5			-.1	-.1	-.4	-.5	-.3	-.5	-.7	-.3	-.4	-.5	-.4	-.2	-.3	.2
.1		.0	-.1	[illegible]	.0	.1	.2	.2	.2	.1	.0	.0	.1	.4	-.1	-.2		.3		.5	.3	.2	-.3	-.2	-.5	-.7	-.5	-.3	-.1	.1	[illegible]	-.4	-.2	[illegible]	.1
.5	.4	.4	.0	.0	[illegible]	.3	.6	.5		.2		.2	.3	.3	.1	.0	.4	.2		.1	[illegible]	-.6	.8	-1.0	-1.3	-1.2	-.8	-.6	-.3	-.4	-.7	[illegible]	-.2	.1	.6
.2	.1	.1	-.2	-.4	-.1	.4	.5	.2	.1	.2	.0	.0	-.1	-.1	-.2	-.3	.2	-.2	-.8	-.5	.3	-.1	-.4	-.2	-.6	-1.2	-.5	-.3	-.6	-.6	[illegible]	-.3	-.1	.1	.4
.4	.2	.2	.0	.0	.2	.2	.3	.1	.2	.0	-.1	-.4	-.3	-.1	.0	.0	.0	-.4	.1	.2		.1		[illegible]	-.3	-.2	-.3	-.3	-.5	-.5	-.4	-.1	.1	.2	.4
.4	.4	.4	.4	.5	.4	.3	.3	.4	.4	.2	.1	.1	.2	.3	.3	.2	.4	.2	.4	.4	.3	.5	.4	-.1	-.1	-.1	-.2	-.1	-.3	.1	.1	.0	.3	.3	.3
.1	.2	.3	.3	.4	.4	.5	.6	.6	.4	.4	.3	.1	.0	.0	.0	.0	[illegible]	[illegible]	.5	.3	.3	.4	.1	.0	-.1	.0	[illegible]	-.1	[illegible]	.0	-.1	-.2	-.1	.1	.1
.2	.0	.2	.1	.2	.2	.4	.4	.7	1.0	.7	.2	.3	.3	.3	.1	.1	.3	.4	.7	.6	.8	.1	.2	.2	.1	.1	.0		.2	.3			.3	.0	.1
.1	.2	.1	.3	.2	-.1	-.1	-.1	.4	.7	.8	.6	.6	.5	.2	.1	.1	.4	.5	.8	.8	.2	.0	-.2	-.1	.0	.1	.1	.1	.1		.7	.5	.3	.4	.2
-.4	-.5	-.5	-.1	.0	.1	.0	-.2	.0	-.2	.2	.6	.7	.3	-.1	-.1	-.2	-.3	-.1	.0	.1	.2	[illegible]	-.8	-1.0	-.9	-.8	-.5	-.4	.2	-.3	-.1	.2	-.1	-.2	-.3
-.9	-.9	-1.0	-.6	-.4	-.3	-.1	-.2	-.8	-.9	[illegible]	-.1	.2	.0	-.3	-.2	-.7	-.6	-.6	-.5	-.6	-.5	-.4	-.5	-.7	-.9	-.8	-.7	-.7	[illegible]	-.6	[illegible]	-.2	-.4	-.6	-1.0
-1.2	-1.4	-1.1	-1.2	-1.3	-1.3	-1.1	-1.1	-1.3	-1.2	-1.0	.4	-.5	-.3	-.1	-.3	-.2	-.2	-.4	-.6	-.2	-.6	-.3	-.4	-.5	-.3	-.6	-.7	-.4	-.9	-.6	-.5	-.5	-.5	[illegible]	-.9
-.9	-1.0	-.7	-.9	-1.0	-.9	-.9	-1.3	-1.1	-1.2	-1.1	.9	-1.2	-.9	.9	-.3	.0	-.1	-.2	.0	-.1	.2	-.1	-.3	-.1	.1	-.1	-.2	-.3	-.1	-.2	.0	-.3	-.2	-.5	-.6
-.3	-.1	-.2	-.1	-.1	-.1	-.2	-.1	-.3	-.7	-1.1	[illegible]	-.8	-1.0	-.1	-.2	-.1	-.2	-.1	-.3	-.1	-.1	.1	.4	.0	-.3	-.5	-.1	-.2	.2	.4	-.2	-.1	-.1	-.4	-.4
.7	1.0	1.2	1.3	.7	.8	.4	.2	.9	-.2	.5	1.1	.9	1.0	1.1	.9	.9	.4	.8	.1	.7	.3	-.9	-.3	-.5	.4	-.3	.0	.0	-.3	-.8			-.2	[illegible]	.4

500 KM SATEMS : MEAN O–B TEMPERATURE DIFFERENCES (DEG C) : 30 TO 50 HPA
AUGUST 1996
FIGURE 30
NOAA–14, USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT

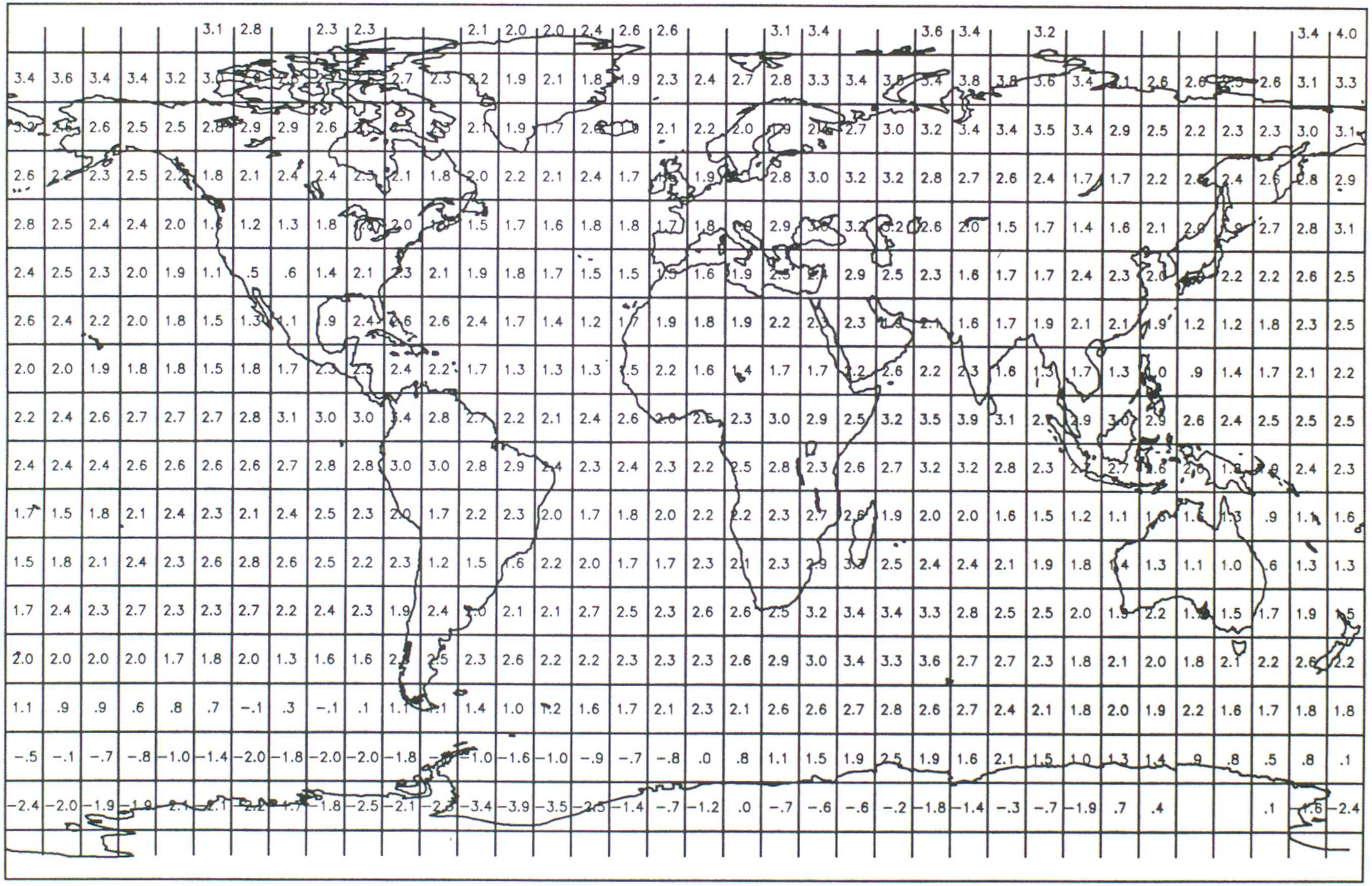

3.1 2.8 2.3 2.3 2.1 2.0 2.0 2.4 2.6 2.6 3.1 3.4 3.6 3.4 3.2 3.4 4.0
3.4 3.6 3.4 3.4 3.2 2.7 2.3 2.2 1.9 2.1 1.8 1.9 2.3 2.4 2.7 2.8 3.3 3.4 3.8 3.8 3.6 3.4 2.6 2.6 2.6 3.1 3.3
3.2 2.6 2.6 2.5 2.5 2.8 2.9 2.9 2.6 2.1 1.9 1.7 2.6 2.1 2.2 2.0 1.9 2.6 2.7 3.0 3.2 3.4 3.4 3.5 3.4 2.9 2.5 2.2 2.3 2.3 3.0 3.1
2.6 2.2 2.3 2.5 2.2 1.8 2.1 2.4 2.4 2.3 2.1 1.8 2.0 2.2 2.1 2.4 1.7 1.9 2.8 3.0 3.2 3.2 2.8 2.7 2.6 2.4 1.7 1.7 2.2 2.6 2.4 2.6 2.8 2.9
2.8 2.5 2.4 2.4 2.0 1.6 1.2 1.3 1.8 2.0 1.5 1.7 1.6 1.8 1.8 1.7 1.8 2.9 3.2 3.2 2.6 2.0 1.5 1.7 1.4 1.6 2.1 2.0 2.7 2.8 3.1
2.4 2.5 2.3 2.0 1.9 1.1 .5 .6 1.4 2.1 2.3 2.1 1.9 1.8 1.7 1.5 1.5 1.5 1.6 1.9 2.5 2.4 2.9 2.5 2.3 1.6 1.7 1.7 2.4 2.3 2.0 2.2 2.2 2.6 2.5
2.6 2.4 2.2 2.0 1.8 1.5 1.3 1.1 .9 2.4 2.6 2.6 2.4 1.7 1.4 1.2 1.7 1.9 1.8 1.9 2.2 2.3 2.3 2.1 1.6 1.7 1.9 2.1 2.1 1.9 1.2 1.2 1.8 2.3 2.5
2.0 2.0 1.9 1.8 1.8 1.5 1.8 1.7 2.3 2.5 2.4 2.2 1.7 1.3 1.3 1.3 1.5 2.2 1.6 1.4 1.7 1.7 2.2 2.6 2.2 2.3 1.6 1.3 1.7 1.3 1.0 .9 1.4 1.7 2.1 2.2
2.2 2.4 2.6 2.7 2.7 2.7 2.8 3.1 3.0 3.0 3.4 2.8 2.7 2.2 2.1 2.4 2.6 2.6 2.5 2.3 3.0 2.9 2.5 3.2 3.5 3.9 3.1 2.9 3.0 2.9 2.6 2.4 2.5 2.5 2.5
2.4 2.4 2.4 2.6 2.6 2.6 2.6 2.7 2.8 2.8 3.0 3.0 2.8 2.9 2.4 2.3 2.4 2.3 2.2 2.5 2.8 2.3 2.6 2.7 3.2 3.2 2.8 2.3 2.7 1.6 2.0 1.8 1.9 2.4 2.3
1.7 1.5 1.8 2.1 2.4 2.3 2.1 2.4 2.5 2.3 2.0 1.7 2.2 2.3 2.0 1.7 1.8 2.0 2.2 2.2 2.3 2.7 2.6 1.9 2.0 2.0 1.6 1.5 1.2 1.1 1.6 1.6 1.3 .9 1.1 1.6
1.5 1.8 2.1 2.4 2.3 2.6 2.8 2.6 2.5 2.2 2.3 1.2 1.5 1.6 2.2 2.0 1.7 1.7 2.3 2.1 2.3 2.9 3.0 2.5 2.4 2.4 2.1 1.9 1.8 1.4 1.3 1.1 1.0 .6 1.3 1.3
1.7 2.4 2.3 2.7 2.3 2.3 2.7 2.2 2.4 2.3 1.9 2.4 2.0 2.1 2.1 2.7 2.5 2.3 2.6 2.6 2.5 3.2 3.4 3.4 3.3 2.8 2.5 2.5 2.0 1.9 2.2 1.8 1.5 1.7 1.9 1.5
2.0 2.0 2.0 2.0 1.7 1.8 2.0 1.3 1.6 1.6 2.3 2.5 2.3 2.6 2.2 2.2 2.3 2.3 2.3 2.6 2.9 3.0 3.4 3.3 3.6 2.7 2.7 2.3 1.8 2.1 2.0 1.8 2.1 2.2 2.6 2.2
1.1 .9 .9 .6 .8 .7 –.1 .3 –.1 .1 1.1 1.1 1.4 1.0 1.2 1.6 1.7 2.1 2.3 2.1 2.6 2.6 2.7 2.8 2.6 2.7 2.4 2.1 1.8 2.0 1.9 2.2 1.6 1.7 1.8 1.8
–.5 –.1 –.7 –.8 –1.0 –1.4 –2.0 –1.8 –2.0 –2.0 –1.8 –1.0 –1.6 –1.0 –.9 –.7 –.8 .0 .8 1.1 1.5 1.9 2.5 1.9 1.6 2.1 1.5 1.0 1.3 1.4 .9 .8 .5 .8 .1
–2.4 –2.0 –1.9 –1.9 –2.1 –2.1 –2.2 –1.7 –1.8 –2.5 –2.1 –2.3 –3.4 –3.9 –3.5 –2.3 –1.4 –.7 –1.2 .0 –.7 –.6 –.6 –.2 –1.8 –1.4 –.3 –.7 –1.9 .7 .4 .1 –1.6 –2.4

TABLE 8

MONTHLY MONITORING OF MARINE SURFACE OBSERVATIONS (COSNA)
DATA TYPE:- DRIFTER
MONITORING CENTRE: BRACKNELL
MONTH: August, 1996

Monitoring procedures

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for drifting buoy.
Area monitored		:10°N - 80°N, 85°W - 0°W
Standard of comparison		:Background field from Bracknell global model.
Position		:Average latitude and longitude for period.
Observation times		:All hours combined.
Elements monitored		:Mean sea-level pressure (hPa) :Wind speed (m s^{-1}) :Wind direction (degrees)
Parameters monitored		
	:NOBS	:Number of observations received excluding duplicates.
	:NGE	:Number of observations with gross errors.
	:PGE	:Percentage of observations with gross errors.
	:SD	:SD of difference of observations from background values excluding those with gross errors.
	:BIAS	:Mean difference of observations from background values excluding those with gross errors. **N.B. A positive bias indicates the observation is veered to the background**
	:RMS	:Root Mean Square difference of observations from background values excluding those with gross errors
GROSS ERROR LIMITS	:15 hPa (pressure) :25 m s^{-1} (Vector Wind)	

N.B. Observations of wind direction are only included in the wind direction statistics if the observed OR background wind speed > 5 m s^{-1}

IDENTIFIER	LAT.	LONG.	HOUR	ELEM	LEVEL	NOBS	NGE	PGE	SD	BIAS	RMS
MEAN SEA LEVEL PRESSURE											
13903	19.9	-32.1	ALL	MSLP	SUR	188	0	0	0.8	0.5	0.9
13905	20.4	-37.4	ALL	MSLP	SUR	204	0	0	0.8	0.2	0.8
13906	11.0	-37.9	ALL	MSLP	SUR	209	0	0	0.9	0.4	1.0
13910	15.4	-37.1	ALL	MSLP	SUR	226	0	0	0.8	0.3	0.9
13911	15.5	-43.9	ALL	MSLP	SUR	195	0	0	1.0	0.5	1.1
13912	17.0	-47.1	ALL	MSLP	SUR	201	0	0	1.1	0.8	1.4
13913	15.4	-31.4	ALL	MSLP	SUR	199	0	0	1.0	0.2	1.0
13915	11.1	-31.6	ALL	MSLP	SUR	202	0	0	0.9	0.1	1.0
25565	59.5	-15.2	ALL	MSLP	SUR	590	0	0	1.4	0.0	1.4
41526	35.8	-58.2	ALL	MSLP	SUR	203	0	0	0.7	0.0	0.7
41611	14.5	-45.1	ALL	MSLP	SUR	203	1	0	1.2	0.0	1.2
41612	11.8	-42.9	ALL	MSLP	SUR	197	0	0	0.8	0.1	0.8
41613	16.7	-43.6	ALL	MSLP	SUR	189	0	0	0.9	0.1	0.9
41614	14.4	-41.3	ALL	MSLP	SUR	185	3	2	2.1	-0.3	2.1
41922	21.0	-43.9	ALL	MSLP	SUR	205	0	0	0.9	0.9	1.2
41924	10.7	-44.2	ALL	MSLP	SUR	207	0	0	0.9	0.5	1.1
44513	57.1	-54.4	ALL	MSLP	SUR	182	2	1	1.1	-0.3	1.1
44613	39.1	-13.9	ALL	MSLP	SUR	257	123	48	0.6	0.5	0.8
44614	59.4	-26.2	ALL	MSLP	SUR	1499	7	0	1.1	0.2	1.1
44616	61.3	-13.8	ALL	MSLP	SUR	1769	5	0	1.1	0.7	1.3
44617	46.9	-43.2	ALL	MSLP	SUR	126	0	0	0.8	0.1	0.8
44727	36.7	-16.5	ALL	MSLP	SUR	932	4	0	0.9	-0.1	1.0
44743	53.9	-51.9	ALL	MSLP	SUR	95	0	0	1.6	-0.3	1.7
44760	22.4	-50.5	ALL	MSLP	SUR	324	0	0	0.9	0.0	0.9
44763	57.6	-27.4	ALL	MSLP	SUR	1863	4	0	1.1	0.1	1.1
44765	59.1	-20.0	ALL	MSLP	SUR	1672	4	0	1.0	-0.2	1.0
44766	48.2	-42.9	ALL	MSLP	SUR	176	0	0	0.9	-0.2	0.9
44767	56.5	-27.4	ALL	MSLP	SUR	1739	4	0	1.1	0.2	1.1
44768	62.9	-31.6	ALL	MSLP	SUR	1978	3	0	0.8	0.0	0.8
44769	59.4	-15.2	ALL	MSLP	SUR	1886	3	0	1.1	0.3	1.2
44770	27.3	-57.8	ALL	MSLP	SUR	604	2	0	0.9	0.3	0.9
44771	53.4	-22.5	ALL	MSLP	SUR	1622	2	0	1.4	0.1	1.4
44772	55.4	-24.8	ALL	MSLP	SUR	1735	2	0	1.1	0.0	1.1
44773	53.1	-12.0	ALL	MSLP	SUR	1031	4	0	1.2	0.5	1.3
44774	50.8	-18.8	ALL	MSLP	SUR	1564	4	0	1.1	0.1	1.1
44775	53.0	-45.2	ALL	MSLP	SUR	744	5	1	1.2	-0.2	1.2
44777	56.2	-38.8	ALL	MSLP	SUR	919	3	0	1.3	0.4	1.3
44778	55.1	-34.7	ALL	MSLP	SUR	886	5	1	1.1	0.2	1.1
44911	55.4	-49.2	ALL	MSLP	SUR	83	0	0	0.9	0.3	1.0
49608	41.0	-10.0	ALL	MSLP	SUR	1	0	0	0.0	-0.3	0.3
50503	26.9	-73.1	ALL	MSLP	SUR	1	0	0	0.0	-2.3	2.3
61525	35.6	-4.2	ALL	MSLP	SUR	277	0	0	1.0	1.5	1.8
62501	49.4	-19.5	ALL	MSLP	SUR	606	0	0	1.2	-0.3	1.2
62503	42.0	-15.9	ALL	MSLP	SUR	592	0	0	0.8	0.0	0.8
62504	42.8	-12.5	ALL	MSLP	SUR	593	0	0	0.9	-0.1	1.0
62505	49.1	-17.4	ALL	MSLP	SUR	616	0	0	1.1	0.3	1.1
62506	49.9	-17.7	ALL	MSLP	SUR	495	0	0	1.1	0.4	1.2
62507	40.8	-20.9	ALL	MSLP	SUR	242	0	0	1.1	0.4	1.2
62508	48.1	-24.9	ALL	MSLP	SUR	697	0	0	1.0	0.7	1.3
62510	42.9	-16.6	ALL	MSLP	SUR	618	0	0	0.8	0.3	0.8
62910	62.5	-29.8	ALL	MSLP	SUR	124	0	0	0.9	0.6	1.1
65594	58.0	-39.5	ALL	MSLP	SUR	1842	2	0	1.1	-0.1	1.1
65595	57.7	-34.8	ALL	MSLP	SUR	1590	3	0	1.2	-0.3	1.2
65598	61.4	-33.1	ALL	MSLP	SUR	1783	2	0	1.0	-0.5	1.1
65599	57.4	-55.0	ALL	MSLP	SUR	422	0	0	3.3	-1.8	3.7
WIND SPEED											
41526	35.8	-58.2	ALL	SPEED	SUR	199	0	0	1.4	-1.3	1.9
41611	14.5	-45.1	ALL	SPEED	SUR	194	0	0	2.6	1.3	2.9
41612	11.8	-42.9	ALL	SPEED	SUR	189	0	0	1.8	0.8	2.0
41613	16.7	-43.6	ALL	SPEED	SUR	186	0	0	1.3	0.4	1.3

IDENTIFIER	LAT.	LONG.	HOUR	ELEM	LEVEL	NOBS	NGE	PGE	SD	BIAS	RMS
WIND SPEED											
41614	14.4	-41.3	ALL	SPEED	SUR	93	0	0	4.0	1.9	4.5
44513	57.1	-54.4	ALL	SPEED	SUR	170	0	0	2.2	-4.1	4.6
44613	39.1	-13.9	ALL	SPEED	SUR	984	1	0	1.7	-1.5	2.2
44772	55.4	-24.8	ALL	SPEED	SUR	2	0	0	3.6	-8.1	8.9
49608	41.0	-10.0	ALL	SPEED	SUR	1	0	0	0.0	-2.6	2.6
50503	26.9	-73.1	ALL	SPEED	SUR	1	0	0	0.0	11.4	11.4
65598	61.4	-33.1	ALL	SPEED	SUR	21	20	95	0.0	14.6	14.6
WIND DIRECTION											
41526	35.8	-58.2	ALL	DIRN.	SUR	100	0	0	13.8	7.7	15.8
41611	14.5	-45.1	ALL	DIRN.	SUR	181	0	0	42.0	-1.1	42.0
41612	11.8	-42.9	ALL	DIRN.	SUR	129	0	0	26.6	8.2	27.9
41613	16.7	-43.6	ALL	DIRN.	SUR	185	0	0	18.9	0.3	19.0
41614	14.4	-41.3	ALL	DIRN.	SUR	82	0	0	41.0	-22.3	46.6
44513	57.1	-54.4	ALL	DIRN.	SUR	123	0	0	28.8	36.4	46.4
44613	39.1	-13.9	ALL	DIRN.	SUR	606	1	0	21.0	-2.8	21.2
44772	55.4	-24.8	ALL	DIRN.	SUR	1	0	0	0.0	94.3	94.3
50503	26.9	-73.1	ALL	DIRN.	SUR	1	0	0	0.0	-3.4	3.4
65598	61.4	-33.1	ALL	DIRN.	SUR	21	20	95	0.0	-32.1	32.1

TABLE 9

MONTHLY MONITORING OF AIRCRAFT OBSERVATIONS (COSNA)
MONITORING CENTRE: BRACKNELL
MONTH: August, 1996

Monitoring procedures:
Period :One calendar month.

Data monitored :Statistics for each airline carrier.

Area monitored :40°N - 70°N, 60°W - 0°W.

Standard of comparison :Background field from Bracknell global model.

Observation times :All hours combined.

Level(s) monitored :300.0 - 150.0 hPa

Elements monitored :TEMP in °C ; WIND in m s^{-1}

Parameters monitored :N REP. :Number of observations received excluding duplicates.

:PG :Percentage of observations with gross errors.

:PR :Percentage of observations rejected by quality control including rejections from the duplicate check.

:PC :Percentage of observations with calm winds.

:RMS :Root Mean Square difference of observations from background values excluding those with gross errors in Temperature & vector wind.

:BIAS :Mean difference of observations from background values excluding those with gross errors in Temperature & vector wind.

GROSS ERROR LIMITS :10.0 °C ; 60 m s^{-1} Vector Wind

SELECTION CRITERIA :N REP $\geq$ 20

IDENT.	TEMPERATURE					WIND					
	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
AAL	3209	0	1	1.9	-0.2	3230	0	2	0	7.7	1.3
AAN	161	0	1	1.4	-0.6	158	0	3	0	7.5	-0.3
ACA	1609	1	2	2.2	0.4	1627	0	1	0	7.1	0.6
AEA	393	0	54	2.7	1.5	386	0	4	0	8.5	0.8
AEL	716	1	2	1.8	-0.3	717	0	4	0	7.7	0.9
AFL	217	2	100	2.8	1.1	217	0	4	0	8.4	1.6
AFR	985	1	5	1.8	-0.2	993	0	5	0	7.6	1.3
AIC	30	0	17	4.0	-0.9	31	0	42	0	17.7	10.9
AIH	130	2	2	1.5	0.0	135	0	1	0	8.1	0.8
AMT	84	0	12	2.0	0.3	86	0	10	0	8.1	2.3
AMX	167	1	2	1.5	-0.3	168	0	4	0	8.7	0.9
ANZ	228	0	1	2.0	-0.9	228	0	3	0	7.6	-0.1
AOM	355	0	2	1.8	0.8	364	0	2	0	6.8	1.1
ATN	20	0	20	4.7	-3.6	21	0	100	0	9.5	0.0
AUA	82	1	6	1.9	-0.9	84	0	7	0	8.7	1.0
AVA	121	2	2	2.1	0.3	121	0	3	0	9.0	1.2
AZA	515	0	4	2.7	1.0	529	0	4	0	7.7	1.9
BAL	342	1	20	1.7	-0.7	345	0	20	0	7.6	0.6
BAW	1514	0	2	1.9	-0.2	1523	0	3	0	7.1	1.0
BBB	32	0	6	1.8	-0.8	32	0	13	0	9.0	0.4
BWA	110	0	2	2.9	1.9	111	0	5	0	8.8	0.8
CDN	954	0	0	2.0	0.4	964	0	2	1	7.1	1.1
CFG	512	0	1	1.8	-1.1	514	0	2	0	7.8	0.4
CKT	124	0	3	1.6	0.3	126	0	3	0	7.9	0.7
CLI	291	0	2	2.1	0.1	309	0	1	0	7.4	0.7
CLX	186	1	2	2.0	-0.5	192	0	3	0	8.6	1.5
CMM	346	0	0	1.9	0.2	346	0	3	1	6.6	1.2
COA	587	0	3	1.9	0.7	589	0	4	0	8.7	0.9
CRL	284	1	5	1.9	0.6	288	0	5	0	7.7	1.1
CSA	25	0	0	1.7	-0.9	25	0	0	0	7.1	2.1
CTM	76	3	22	2.6	-0.7	76	0	24	0	6.4	0.4
CUB	264	1	100	2.3	1.2	265	0	20	1	10.5	2.3
DAF	26	0	8	1.5	0.0	26	0	12	4	7.0	0.3
DAL	2763	0	1	1.9	0.2	2793	0	1	0	8.0	1.1
DHL	313	1	100	3.8	-0.3	316	0	4	0	9.5	0.1
DLH	2695	0	8	2.0	0.4	2709	0	10	1	7.4	1.3
DOA	47	2	2	1.5	0.2	47	0	2	0	8.5	0.6
EIA	20	0	20	2.1	-0.8	21	0	29	0	11.2	5.4
ELY	179	1	4	1.8	0.1	183	0	5	0	8.1	1.2
EWW	172	2	100	3.8	0.7	175	0	100	0	16.7	3.7
FDX	569	0	2	1.7	0.4	575	0	3	0	7.9	0.8
FIN	598	0	1	2.1	0.5	594	0	4	1	8.1	1.2
GAF	65	0	0	1.9	0.7	66	0	0	0	7.5	1.3
GTI	54	0	0	1.7	0.2	55	0	11	0	7.7	2.0
HLF	101	0	2	1.4	-0.8	101	0	3	0	8.0	-0.9
IBE	1316	2	23	1.9	0.3	1309	0	23	0	8.6	0.9
ICE	648	0	1	2.0	0.0	648	0	1	0	7.4	1.4
KAC	24	0	8	2.0	0.0	24	0	13	0	15.3	1.2
KLM	2168	0	1	1.9	0.3	2182	0	3	0	7.6	1.1
LDA	137	0	7	1.8	-1.3	136	0	7	0	7.2	1.0
LDI	119	0	22	1.9	-1.2	117	0	22	0	7.3	0.3
LIB	131	2	5	1.6	0.4	132	1	9	0	8.3	0.2
LKR	79	0	1	1.5	0.7	81	0	6	0	9.3	-0.4
LOT	399	1	3	2.3	-0.9	400	0	1	0	7.9	0.3
LTU	532	1	6	1.8	0.1	533	0	6	0	7.3	0.9
MAH	24	0	8	2.8	-0.9	24	0	4	0	8.4	3.6
MPH	600	0	1	1.9	-0.1	601	0	1	0	7.2	0.9
NWA	3167	0	2	2.3	1.0	3232	0	2	0	8.3	1.3
OAL	57	4	4	2.6	1.2	58	0	5	0	8.9	2.8

			TEMPERATURE					WIND			
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
PAC	41	0	12	2.9	0.4	46	0	13	0	7.1	1.0
RAM	23	9	4	1.3	-1.1	23	0	0	0	8.5	0.0
RCH	336	1	100	2.6	0.0	344	0	100	0	11.7	2.8
RIA	276	0	11	2.2	1.2	286	0	24	0	15.1	2.5
RJA	79	1	1	1.9	0.5	78	0	0	0	6.7	0.6
ROT	22	0	5	2.1	-0.5	24	0	0	0	7.3	1.2
RRR	179	1	20	2.7	-0.1	180	0	20	1	8.1	1.1
SAB	78	0	5	2.1	0.1	80	0	6	0	9.8	1.8
SAS	1318	0	4	2.5	0.5	1314	0	2	1	7.2	1.0
SIA	99	1	7	2.1	-1.1	104	0	7	0	8.9	1.4
SLR	57	0	16	1.7	-1.0	58	0	17	0	6.4	-0.3
SPP	65	0	22	2.0	0.1	65	0	20	0	8.3	0.5
SVA	167	0	1	1.9	0.6	175	0	2	0	9.4	1.7
SWR	165	2	4	1.7	0.3	168	0	4	0	9.1	1.5
TAP	489	0	8	1.5	0.0	482	0	9	0	7.4	1.0
TEJ	77	0	18	1.4	-0.1	78	0	22	0	9.1	1.3
THY	20	5	15	2.9	1.4	22	0	18	0	10.2	-1.7
TOW	143	1	4	2.0	-0.5	145	0	6	0	9.3	1.2
TSC	253	0	43	2.6	0.1	253	0	5	0	8.4	1.3
TWA	1737	0	2	1.9	0.1	1721	0	2	0	7.7	1.3
TWE	24	4	13	2.5	-0.6	22	0	5	0	7.1	0.0
UAL	2007	0	2	2.4	-1.0	2016	0	2	0	7.2	0.9
ULE	168	0	0	1.3	0.1	165	0	1	0	7.9	0.6
UPS	590	1	14	1.6	-0.2	603	0	16	0	8.1	1.3
USA	387	0	2	1.6	-0.4	380	0	2	0	6.6	1.7
VIA	114	0	7	2.0	0.9	115	0	6	0	6.4	1.0
VIR	227	1	3	2.0	-0.4	226	0	2	0	8.3	1.9
WOA	271	1	7	1.9	0.8	270	0	7	0	6.9	1.3
BA	8700	0	13	1.4	0.4	8696	0	13	0	6.8	1.2
KL	4256	0	12	1.4	0.4	4255	0	12	0	7.1	1.2
LH	605	0	13	1.8	0.4	602	0	12	0	6.7	1.4
N	243	2	9	3.2	0.8	255	0	5	0	8.8	0.8

TABLE 10

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS (COSNA)
MONITORING CENTRE: BRACKNELL
MONTH: August, 1996

Monitoring procedures

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for radiosonde TEMPs.
Area monitored		:0°N - 90°N, 100°W - 40°E
Standard of comparison		:Background field from Bracknell global model.
Position		:Average latitude and longitude for period.
Observation times		:00, 12 UTC.
Level monitored		:100 hPa.
Element monitored		:GEOPOTENTIAL HEIGHT in metres
Parameters monitored	:NUM OBS	:Number of observations available at level shown during period.
	:NUM GROSS	:Number of gross errors at level shown during period.
	:% REJ	:Percentage of observations rejected by quality control at level shown during period.
	:SD	:SD of difference of observations from background values at level shown excluding those with gross errors.
	:BIAS	:Mean difference of observations from background values at level shown excluding those with gross errors.

GROSS ERROR LIMITS :Defined in Appendix I.1

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	SD	RMS	BIAS
DBBH	00	Z	100	24	0	16.5	22.5	15.3
DBBH	12	Z	100	25	0	18.6	30.8	24.5
DBLK	00	Z	100	1	0	0.0	4.0	4.0
FNOR	00	Z	100	9	0	32.4	33.3	-7.9
FNOR	12	Z	100	8	0	13.9	24.9	-20.6
FNOU	00	Z	100	14	0	18.6	18.6	-0.1
FNOU	12	Z	100	14	0	13.7	18.0	-11.6
FNPH	00	Z	100	12	0	14.2	18.9	-12.4
FNPH	12	Z	100	10	0	18.6	33.8	-28.2
FNRS	00	Z	100	9	0	10.6	10.6	-0.7
FNRS	12	Z	100	9	0	11.2	22.3	-19.2
JBOA	00	Z	100	1	0	0.0	25.0	-25.0
JIVB	00	Z	100	1	0	0.0	3.0	-3.0
LDWR	00	Z	100	31	0	14.0	14.2	-2.5
LDWR	12	Z	100	29	0	13.2	14.7	-6.6
OXVH2	00	Z	100	22	0	17.0	19.4	-9.4
OXVH2	12	Z	100	22	0	17.7	18.6	-5.6
OXYH2	00	Z	100	20	0	13.6	13.9	-3.0
OXYH2	12	Z	100	18	1	16.7	18.6	-8.2
SHIP	00	Z	100	1	0	0.0	24.0	24.0
UQYC	00	Z	100	9	0	19.4	35.3	29.4
V2EZ	12	Z	100	2	0	1.0	11.0	-11.0
V2GH	00	Z	100	8	0	23.8	39.9	-32.0
V2GH	12	Z	100	10	0	20.3	41.3	-36.0
V2LV	00	Z	100	27	0	12.7	12.8	1.5
V2LV	12	Z	100	27	0	13.2	13.5	2.5
03953	00	Z	100	30	0	10.5	12.6	6.9
03953	12	Z	100	31	0	11.2	12.5	5.5
04018	00	Z	100	30	0	16.9	20.3	11.3
04018	12	Z	100	29	0	30.6	34.9	16.8
04220	00	Z	100	28	0	12.8	12.9	0.9
04220	12	Z	100	31	0	9.3	11.7	7.0
04270	00	Z	100	27	0	15.9	19.2	-10.7
04270	12	Z	100	28	0	15.6	18.2	-9.4
04339	00	Z	100	30	0	13.6	13.6	0.4
04339	12	Z	100	29	0	7.5	7.9	2.6
04360	00	Z	100	29	0	15.1	16.6	7.0
04360	12	Z	100	31	0	21.4	22.3	6.3
08001	00	Z	100	25	0	16.8	16.9	1.4
08001	12	Z	100	27	0	16.3	20.0	-11.7
08508	00	Z	100	30	0	10.2	10.4	-2.0
08508	12	Z	100	31	0	15.9	25.1	-19.5
60020	00	Z	100	30	0	13.0	16.5	10.3
60020	12	Z	100	30	0	12.8	15.3	-8.4
71600	00	Z	100	27	0	15.0	15.4	-3.5
71600	12	Z	100	26	0	16.3	16.7	-3.3
72201	00	Z	100	26	0	24.3	35.1	25.3
72201	12	Z	100	28	1	15.7	42.1	39.0
72402	00	Z	100	29	0	15.9	27.3	22.2
72402	12	Z	100	24	0	14.3	46.0	43.8
74494	00	Z	100	30	0	18.7	20.6	8.6
74494	12	Z	100	29	0	40.2	52.5	33.8
78016	00	Z	100	1	0	0.0	7.0	-7.0
78016	12	Z	100	28	0	11.9	17.7	-13.1

TABLE 11

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS (COSNA)
MONITORING CENTRE: BRACKNELL
MONTH: August, 1996

Monitoring procedures:

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for radiosonde TEMPs.
Area monitored		:0°N - 90°N, 100°W - 40°E
Standard of comparison		:Background field from Bracknell global model.
Position		:Average latitude and longitude for period.
Observation times		:00, 12 UTC.
Level monitored		:500 hPa.
Element monitored		:GEOPOTENTIAL HEIGHT in metres
Parameters monitored	:NUM OBS	:Number of observations available at level shown during period.
	:NUM GROSS	:Number of gross errors at level shown during period.
	:% REJ	:Percentage of observations rejected by quality control at level shown during period.
	:SD	:SD of difference of observations from background values at level shown excluding those with gross errors.
	:BIAS	:Mean difference of observations from background values at level shown excluding those with gross errors.

GROSS ERROR LIMITS :Defined in Appendix I.1

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	SD	RMS	BIAS
BVJ	00	Z	500	1	0	0.0	22.0	22.0
DBBH	00	Z	500	25	0	12.9	15.4	8.4
DBBH	12	Z	500	26	0	10.8	11.4	3.6
DBLK	00	Z	500	1	0	0.0	21.0	-21.0
EHOA	00	Z	500	1	0	0.0	11.0	11.0
EHOA	12	Z	500	1	0	0.0	18.0	18.0
FNOR	00	Z	500	9	0	16.7	17.9	-6.4
FNOR	12	Z	500	8	0	13.9	15.4	-6.5
FNOU	00	Z	500	15	0	7.5	8.8	4.6
FNOU	12	Z	500	15	0	5.6	5.6	0.1
FNPH	00	Z	500	13	0	8.3	8.4	-0.8
FNPH	12	Z	500	10	0	11.8	13.1	-5.7
FNRS	00	Z	500	11	0	8.2	8.7	-2.9
FNRS	12	Z	500	10	0	7.9	11.4	-8.2
JBOA	00	Z	500	1	0	0.0	11.0	-11.0
JIVB	00	Z	500	1	0	0.0	3.0	-3.0
LDWR	00	Z	500	31	0	6.1	8.7	6.1
LDWR	12	Z	500	28	0	8.5	8.5	0.2
OXVH2	00	Z	500	23	0	13.4	13.6	-2.3
OXVH2	12	Z	500	22	0	13.3	14.5	-5.9
OXYH2	00	Z	500	21	0	18.5	19.4	-6.0
OXYH2	12	Z	500	19	0	19.2	21.7	-10.1
SHIP	00	Z	500	1	0	0.0	3.0	-3.0
SHIPS	00	Z	500	1	0	0.0	9.0	-9.0
UQYC	00	Z	500	10	0	7.4	8.7	4.6
V2EZ	12	Z	500	2	0	10.0	21.5	-19.0
V2GH	00	Z	500	14	0	12.9	20.1	-15.4
V2GH	12	Z	500	14	0	19.2	21.1	-8.7
V2LV	00	Z	500	27	0	8.5	8.5	0.2
V2LV	12	Z	500	28	0	8.2	8.4	2.0
03953	00	Z	500	31	0	8.1	11.1	7.6
03953	12	Z	500	31	0	11.7	12.9	5.3
04018	00	Z	500	30	0	11.2	13.5	7.6
04018	12	Z	500	31	0	17.0	17.9	5.5
04220	00	Z	500	27	0	11.0	11.8	-4.2
04220	12	Z	500	31	0	12.0	13.3	-5.7
04270	00	Z	500	29	0	17.2	17.2	-0.1
04270	12	Z	500	28	0	11.9	13.5	-6.3
04339	00	Z	500	30	0	8.8	9.8	-4.4
04339	12	Z	500	31	0	13.8	15.9	-7.9
04360	00	Z	500	30	0	11.2	11.6	-2.9
04360	12	Z	500	31	0	10.7	13.0	-7.3
08001	00	Z	500	25	0	14.1	14.3	2.3
08001	12	Z	500	28	0	10.9	13.5	-8.0
08508	00	Z	500	30	0	7.8	7.9	0.7
08508	12	Z	500	28	0	7.7	9.5	-5.6
60020	00	Z	500	30	0	10.6	14.7	10.2
60020	12	Z	500	30	0	11.6	13.4	6.7
71600	00	Z	500	27	0	10.1	10.2	-1.9
71600	12	Z	500	26	0	8.6	8.9	2.0
72201	00	Z	500	29	0	9.4	12.2	7.8
72201	12	Z	500	30	0	7.0	13.3	11.3
72402	00	Z	500	30	0	6.8	11.5	9.2
72402	12	Z	500	30	0	10.1	16.5	13.0
74494	00	Z	500	31	0	8.4	8.7	2.4
74494	12	Z	500	31	0	11.1	11.1	0.5
78016	00	Z	500	1	0	0.0	3.0	3.0
78016	12	Z	500	27	0	8.5	11.8	-8.1

TABLE 12

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS (COSNA)
MONITORING CENTRE: BRACKNELL
MONTH: August, 1996

Monitoring procedures

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for radiosonde TEMPs.
Area monitored		:0°N - 90°N, 100°W - 40°E
Standard of comparison		:Background field from Bracknell global model.
Position		:Average latitude and longitude for period.
Observation times		:00, 12 UTC.
Level monitored		:100 hPa.
Element monitored		:VECTOR WIND in m s^{-1}
Parameters monitored	:NUM OBS	:Number of observations available at level shown during period.
	:NUM GROSS	:Number of gross errors at level shown during period.
	:% REJ	:Percentage of observations rejected by quality control at level shown during period.
	:UBIAS,VBIAS	:Mean difference of observations of U and V components from background values at level shown excluding those with gross errors.
	:RMS	:Root Mean Square difference of observations from background values at level shown excluding those with gross errors.

GROSS ERROR LIMITS :Defined in Appendix I.2

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	% REJ	RMS	UBIAS	VBIAS
DBBH	00	V	100	24	0	0	0.0	0.6	0.6
DBBH	12	V	100	24	0	0	1.8	-0.2	0.1
DBLK	00	V	100	1	0	0	1.5	0.5	-0.5
FNOR	00	V	100	9	0	0	1.8	-0.7	1.2
FNOR	12	V	100	8	0	0	1.8	0.0	0.2
FNOU	00	V	100	13	0	0	1.8	0.5	-0.7
FNOU	12	V	100	14	0	0	2.3	-0.5	-0.6
FNPH	00	V	100	12	0	0	2.1	-0.2	-0.8
FNPH	12	V	100	10	0	0	2.6	1.3	-0.6
FNRS	00	V	100	9	0	0	3.2	2.4	-0.6
FNRS	12	V	100	9	0	0	3.2	0.4	1.0
JBOA	00	V	100	1	0	0	3.2	-0.2	-1.0
JDWX	00	V	100	1	0	0	2.5	-4.6	1.8
JIVB	00	V	100	1	0	0	2.5	1.3	0.4
LDWR	00	V	100	31	0	0	2.5	0.2	0.3
LDWR	12	V	100	30	0	0	1.6	0.5	0.0
OXVH2	00	V	100	22	0	0	1.7	-2.1	0.8
OXVH2	12	V	100	20	0	0	1.9	-1.6	0.8
OXYH2	00	V	100	19	0	0	2.0	-1.1	-0.2
OXYH2	12	V	100	18	0	0	2.2	0.0	-0.4
SHIP	00	V	100	1	0	0	2.0	0.3	0.6
UQYC	00	V	100	8	0	0	2.0	1.0	-2.9
V2EZ	12	V	100	2	0	0	9.0	-3.9	2.7
V2GH	00	V	100	8	0	0	9.0	0.3	-0.4
V2GH	12	V	100	9	0	0	9.0	-1.6	-0.8
V2LV	00	V	100	27	0	0	9.0	1.3	-0.7
V2LV	12	V	100	27	0	0	2.9	0.0	-0.1
03953	00	V	100	30	0	0	2.0	0.2	1.6
03953	12	V	100	30	0	0	2.2	-0.7	1.6
04018	00	V	100	30	0	0	1.6	-1.3	-0.4
04018	12	V	100	28	0	0	1.8	-0.4	-1.0
04220	00	V	100	28	0	0	1.7	-0.8	0.7
04220	12	V	100	31	0	0	2.0	-0.5	0.5
04270	00	V	100	26	0	0	1.6	-1.5	1.2
04270	12	V	100	28	0	0	2.6	-1.0	0.5
04339	00	V	100	30	0	0	3.0	-0.2	0.2
04339	12	V	100	29	0	0	1.4	-0.8	-1.0
04360	00	V	100	29	0	0	1.8	-0.8	1.0
04360	12	V	100	31	0	0	1.9	-0.3	0.0
08001	00	V	100	25	0	0	2.8	0.3	1.8
08001	12	V	100	27	0	0	2.6	-0.6	0.7
08508	00	V	100	30	0	0	3.2	0.8	0.5
08508	12	V	100	30	0	0	2.2	0.4	0.7
60020	00	V	100	29	0	0	5.5	0.0	0.1
60020	12	V	100	30	0	0	2.6	-0.1	-0.5
71600	00	V	100	27	0	0	2.9	-0.7	-0.1
71600	12	V	100	26	0	0	2.3	0.7	-0.3
72201	00	V	100	25	1	3	2.6	6.9	-1.3
72201	12	V	100	28	0	3	1.9	0.1	-0.4
72402	00	V	100	25	0	0	2.5	-0.7	1.1
72402	12	V	100	22	0	0	2.8	-2.3	-1.3
74494	00	V	100	30	0	0	2.2	-0.4	-0.1
74494	12	V	100	28	0	0	2.1	-1.1	0.0
78016	00	V	100	1	0	0	3.7	-0.6	-2.1
78016	12	V	100	27	0	0	3.7	0.0	-0.4

TABLE 13

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS (COSNA)
MONITORING CENTRE: BRACKNELL
MONTH: August, 1996

Monitoring procedures

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for radiosonde TEMPs.
Area monitored		:0°N - 90°N, 100°W - 40°E
Standard of comparison		:Background field from Bracknell global model.
Position		:Average latitude and longitude for period.
Observation times		:00, 12 UTC
Level monitored		:500 hPa.
Element monitored		:VECTOR WIND in m s^{-1}
Parameters monitored	:NUM OBS	:Number of observations available at level shown during period.
	:NUM GROSS	:Number of gross errors at level shown during period.
	:% REJ	:Percentage of observations rejected by quality control at level shown during period.
	:UBIAS,VBIAS:	Mean difference of observations of U and V components from background values at level shown excluding those with gross errors.
	:RMS	:Root Mean Square difference of observations from background values at level shown excluding those with gross errors.

GROSS ERROR LIMITS :Defined in Appendix I.2

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	% REJ	RMS	UBIAS	VBIAS
DBBH	00	V	500	25	0	0	0.0	1.4	-0.3
DBBH	12	V	500	26	0	0	2.9	-0.2	-0.5
DBLK	00	V	500	1	0	0	2.2	1.7	-0.7
EHOA	12	V	500	1	0	0	5.6	-0.7	-0.8
FNOR	00	V	500	9	0	0	5.6	-0.9	0.4
FNOR	12	V	500	8	0	0	5.6	-1.1	0.4
FNOU	00	V	500	14	0	0	5.6	1.6	-0.5
FNOU	12	V	500	15	0	0	3.3	-1.3	-0.5
FNPH	00	V	500	13	0	0	2.3	-0.6	0.0
FNPH	12	V	500	11	0	0	2.2	-0.2	-0.3
FNRS	00	V	500	11	0	0	2.3	-0.7	0.4
FNRS	12	V	500	10	0	0	4.1	-0.2	-1.0
JBOA	00	V	500	1	0	0	3.0	-0.2	-0.3
JIVB	00	V	500	1	0	0	2.9	0.6	-5.2
LDWR	00	V	500	30	0	0	2.9	0.6	1.7
LDWR	12	V	500	28	0	0	2.8	0.4	0.4
OXVH2	00	V	500	23	0	0	2.8	-2.5	1.8
OXVH2	12	V	500	21	0	4	3.7	0.4	0.0
OXYH2	00	V	500	20	0	0	6.1	-0.6	1.3
OXYH2	12	V	500	19	0	0	2.8	-0.4	0.9
SHIP	00	V	500	1	0	0	2.9	-3.7	0.9
SHIPS	00	V	500	1	0	0	2.9	0.3	0.4
UQYC	00	V	500	9	0	0	2.9	0.0	-0.6
V2EZ	12	V	500	2	0	0	3.9	-2.2	7.3
V2GH	00	V	500	13	0	0	3.9	-1.6	0.0
V2GH	12	V	500	15	0	0	3.0	-1.1	1.2
V2LV	00	V	500	27	0	0	2.9	0.1	0.8
V2LV	12	V	500	28	0	0	3.5	-0.7	0.1
03953	00	V	500	31	0	0	3.0	0.6	-0.7
03953	12	V	500	31	0	0	2.9	0.7	-1.1
04018	00	V	500	29	0	0	2.4	0.4	0.3
04018	12	V	500	31	0	0	3.8	0.6	-0.5
04220	00	V	500	25	0	0	4.6	-0.9	2.4
04220	12	V	500	31	0	0	2.8	0.7	0.4
04270	00	V	500	29	0	0	2.6	-0.2	1.3
04270	12	V	500	28	0	0	2.6	-0.7	1.8
04339	00	V	500	30	0	0	3.8	0.4	1.4
04339	12	V	500	30	0	0	3.4	0.1	-0.1
04360	00	V	500	30	0	0	2.1	-1.0	0.2
04360	12	V	500	31	0	0	2.7	0.0	-1.3
08001	00	V	500	25	0	0	2.5	-0.4	0.9
08001	12	V	500	28	0	0	3.1	-1.4	-1.2
08508	00	V	500	29	0	0	3.7	-0.7	0.1
08508	12	V	500	27	0	0	1.8	-1.8	-0.1
60020	00	V	500	29	0	0	2.6	3.3	1.2
60020	12	V	500	30	0	0	4.5	0.8	1.0
71600	00	V	500	27	0	0	2.9	-0.5	0.1
71600	12	V	500	26	0	0	3.3	0.2	-0.4
72201	00	V	500	28	0	0	3.2	0.5	-0.2
72201	12	V	500	30	0	0	2.6	0.7	0.4
72402	00	V	500	19	0	5	2.2	-0.4	2.5
72402	12	V	500	27	0	0	3.7	-2.6	-0.5
74494	00	V	500	31	0	3	3.4	0.2	-0.2
74494	12	V	500	31	0	0	5.2	0.4	0.8
78016	00	V	500	1	0	0	4.1	2.7	0.4
78016	12	V	500	27	0	0	4.1	-0.3	0.1

APPENDIX I

1. The gross error limits for observation minus background differences of geopotential height in Tables 5, 10 and 11 are:-

Level (hPa)	Geopotential height (metres)
1000	100
850	100
700	100
500	150
400	175
300	200
250	225
200	250
150	275
100	300
70	375
50	400
30	450

The weighted RMS values used in Table 5,10 and 11 are calculated using the following weights:-

Level (hPa)	Weight
1000	3.70
850	3.40
700	2.90
500	2.20
400	1.90
300	1.60
250	1.50
200	1.37
150	1.19
100	1.00
70	0.87
50	0.80
30	0.64

2. The gross error limits for observation minus background differences of windspeed in Tables 6,12 and 13 are:-

Level (hPa)	Windspeed m s^{-1}
1000	35
850	35
700	40
500	45
400	50
300	60
250	60
200	50
150	50
100	45